

SETTLEMENT REPORT

OF THE

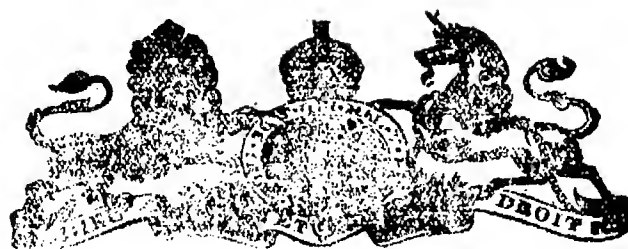
MUZAFFARGARH DISTRICT.

BY

PANDIT HARI KISHAN KAUL,

Settlement Officer.

Published by Authority.



Printed by:

THE "CIVIL AND MILITARY GAZETTE" PRESS,

Sole Contractors for Printing to the Punjab Government.

1904.

CONTENTS OF REPORT

Para.	Subject.	Pages.
CHAPTER I.—GENERAL DESCRIPTION OF THE DISTRICT.		
1	Boundaries and descriptions	1
2	Physical features	<i>ib</i>
3	The rainfall	2
4	The riverain tracts	<i>ib</i>
5	The Chahi-sailab	3
6	The central canal irrigated tract	<i>ib</i>
7	The Thal	<i>ib</i>
CHAPTER II.—PAST FISCAL HISTORY.		
8	Assessment under Native rule	4
9	Diwan Sawan Mal's system	<i>ib</i>
10	The summary settlements	<i>ib</i>
11	The first regular settlement	5
12	Working of the regular settlement	8
CHAPTER III.—PROGRESS SINCE LAST SETTLEMENT.		
13	Cultivated area and area under matured crops	9
14	Crops grown	10
15	Rise in prices	11
16	Communications	12
17	Live stock	<i>ib</i>
18	Population	13
19	Cultivating occupancy	<i>ib</i>
20	Transfers—value of land	14
CHAPTER IV.—REVISION OF THE RECORDS.		
21	Field measurements	15
22	Result of measurements	16
23	The standing record of rights	<i>ib</i>
24	The genealogical tree	17
25	The land jamabandi	<i>ib</i>
26	The date jamabandi	18
27	The garden jamabandi	<i>ib</i>
28	Statement showing water-courses and the area irrigated by them	<i>ib</i>
29	No record of rights in canal irrigation prepared	<i>ib</i>
30	List of holdings not assessed as nabri	19
31	The administration paper	<i>ib</i>
32	Maps	20
33	Tribal custom	21
34	Village Note books	<i>ib</i>
35	Demarcation of boundaries	<i>ib</i>
36	Fixed boundary with Dera Ghazi Khan, Mooltan and Bahawalpur	22
CHAPTER V.—THE NEW ASSESSMENT.		
A.—THE AMOUNT OF THE ASSESSMENT.		
37	Orders for re-assessment	24
38	Assessment circles	<i>ib</i>
39	Classes of soil	25
40	Area on which assessments have been based	26
41	Kharaba and other deductions	<i>ib</i>
42	Deductions for fodder	27
43	Outturns assumed	<i>ib</i>
44	Menials' dues	28
45	Value of produce	<i>ib</i>
46	Landlord's share of the produce	<i>ib</i>
47	Half assets and other standards	29
48	The revenue sanctioned. Its pitch	<i>ib</i>
B.—METHOD OF ASSESSMENT OF REVENUE.		
49	Assessment fixed and fluctuating	30
50	The fixed assessment	<i>ib</i>
51	The ordinary fluctuating assessment	31
52	The Thal system of assessment	33
53	Gardens and mango-trees	<i>ib</i>

Para.	Subject.	Pages.
54	Extended canal irrigation	32
55	Provision for introduction of fluctuating assessment in case of villages placed under fixed assessment.	34
56	Total land revenue	ib
57	Revenue on dates	ib
58	Revenue on grazing land	35
59	Total revenue from all sources	ib
C.—INTERNAL DISTRIBUTION OF REVENUE.		
60	Distribution of fixed land revenue on villages	36
61	Distribution of revenue on wells and pattis	ib
62	Distribution of assessment over holdings	37
63	Gradation of crop rates in assessment circles placed under fluctuating assessment and differentiation of abiana (lamp assessment).	ib
64	Distribution of the grazing assessment	38
D.—OTHER MATTERS CONNECTED WITH THE ASSESSMENT.		
65	Instalments	ib
66	Cesses	39
67	Assigned revenue	ib
68	Deferred assessments	40
69	Secure and insecure areas	ib
CHAPTER VI.—MISCELLANEOUS.		
70	Term of settlement	41
71	Substitution of occupiers' rates for ohher	ib
72	Superior proprietary rights of Government	43
73	Canal credits	ib
74	Protection of forests	ib
75	Management of Government forests and lease of Government waste lands	ib
76	Government lands	ib
77	Patwaris, Kanungos and Naib Tahsildars	ib
78	Zaildars	44
79	Inamdars	45
80	Lambardars	ib
81	Duration and charge of settlement	46
82	Recovery of cost of Settlement from Jagirdars	47
83	Village Directory	ib
84	Dastar-ul-amal	ib
85	Settlement Training	ib
86	Notice of officers	ib
87	Cause of delay in submission of Report	49
	Map of the District showing assessment circles	Front
	Glossary of Vernacular terms	i—ii
APPENDICES.		
I	Statement showing population, area and revenue by tahsils	ii
II	Statement showing the estimated half net assets rates per acre of matured crops for each class of soil in each assessment circle.	iii
III	Statement showing assessment rates sanctioned per acre of matured crops	ib
IV	Statement showing comparison of new land revenue with half net assets, previous land revenue and that by sanctioned revenue rates.	iv
V	Statement showing revenue from all sources	v
VI	Statement showing expenditure incurred on the settlement	vi
VII. A.	Rules relating to certificates of exemption of newly constructed or repaired wells.	viii
VII. B.	Rules for remission of water advantage land revenue	ix
VII. C.	Rules for remission of revenue on wells going out of use	ib
VII. D.	Rules for collection of land revenue assessed on wells in the area under the fluctuating system of assessment by holdings in the Muzaffargarh District.	ib
VII. E.	Rules for ascertaining and assessing the area irrigated from canals in holdings not assessed at settlement as canal irrigated.	x
VII. F.	Rules for the assessment of gardens and fruit trees	ib
VII. G.	Rules regarding exemption or favourable treatment of certain lands in the assessment of occupiers' rates.	ib
VII. H.	Secure and insecure areas	xi

SETTLEMENT REPORT

OF THE

MUZAFFARGARH DISTRICT.

CHAPTER I.—GENERAL DESCRIPTION OF THE DISTRICT

1. The Muzaffargarh District is triangular in shape with its two sides running along the rivers Indus and Chenáb, the apex lying at the junction of the two rivers at the extreme south. Its base is the northern boundary of the district. On the north it adjoins the Leiah Tahsil of the Miánwáli District and the Shorkot Tahsil of the Jhang District; on the east it is bounded by the Mooltan District down to the point where the Ghara (Sutlej and Beás combined) meets the Chenáb (Jhelum, Chenáb and Rávi). Below this point, the eastern boundary of the district is the Baháwalpur State. At the extreme south of the district is the trijunction of the Baháwalpur State on the one hand and the Dera Gházi Khan and Muzaffargarh Districts on the other. The Dera Gházi Khan District adjoins the whole length of the western boundary of Muzaffargarh. The extreme length of the district is 130 miles and the breadth, at the base of the triangle, is about 55 miles. The district is divided into three tahsils, Sinánwán, Muzaffargarh and Alipur, and there is a sub-tahsil at Rangpur attached to the Muzaffargarh Tahsil. The total area of the district according to new measurements is 3,156 square miles. The following extract from the last Settlement Report gives an account of the formation of the district now known as Muzaffargarh:—

“In April or May 1849 the British districts of Khangarh and Leiah were formed. Khangarh contained the present tahsils of Muzaffargarh and Alipur and the *talukás* of Garh Mahárája and Ahmadpur which are now in Jhang. Khangarh was first named as the head-quarters of the district, but before the end of 1849 it was removed to Muzaffargarh. Khangarh contained four tahsils, Rangpur, Khangarh with its head quarters at Muzaffargarh, Kinjar and Sítpur. What is now the Sinanwan Tahsil was in the Leiah District and had its head quarters at Kot Adu. In 1859, the Sinánwán Tahsil was separated from Leiah and added to this district and the district took the name of Muzaffargarh and was attached to the Mooltan Division. It was in 1861 that the district took its present shape. The Rangpur Tahsil was abolished. The *talukás* of Garh Mahárája and Ahmadpur were joined to Jhang and the rest of the tahsil was attached to the Muzaffargarh Tahsil. The Kinjar Tahsil was abolished and its *talukás* added to Muzaffargarh.”

Since last settlement 31 villages have been transferred to the Mooltan District and 11 to Dera Gházi Khan owing to changes in the course of the river, while 3 have come over from Mooltan, 4 from Dera Gházi Khan and 1 from the Baháwalpur State. Fixed boundaries have now been established with the adjoining districts and the Baháwalpur State.

2. The rivers are the remarkable feature of the district and, with reference to these, the district is divided into four large tracts presenting different appearance and differing considerably in circumstances. The lands adjoining the river on the two sides of the triangle are annually flooded by the rivers. Near the apex of the triangle there is a tract which, though removed and protected from ordinary floods of the two rivers, is yet near enough to be flooded now and again when the rivers (particularly the Indus) rise high. Higher up there is the inland tract protected from river floods and irrigated by inundation canals derived from the same rivers. To the extreme north lies the sandy desert called the Thal which is beyond the reach of floods and is at present outside the limits of canal irrigation.

3. In no part of the district does cultivation depend entirely on rainfall.

The rainfall. The following table shows the average rainfall of the past ten years by tahsils :—

	1892-93 to 1901-02.			
	Muzaffargarh.	Alipur.	Sinánwán.	Average for the district.
For the summer months (April to September)	4.00	3.74	4.44	4.06
For the winter months (October to March)	1.37	1.00	1.38	1.25
For the whole year ...	5.37	4.74	5.82	5.31

The district gets between 5 and 6 inches of rain every year, of which rather more than one inch falls during the winter months. It is clear that 4 inches of rain in summer cannot suffice for even enabling the sowing of crops, and so people have to look to other means for getting the moisture necessary for cultivating their lands. The winter rains are, however, useful in helping to maturity the rabi crops which have been sown on *sailáb* or canal water and cannot be irrigated from wells or *jhallars*, or in generally improving the condition of the crops.

The quantity of rain received in winter is, however, too small to spread over a considerable period, and so the usefulness of the winter rains depends upon the opportuneness or otherwise of the shower (which is nothing more than a windfall). A timely fall of rain saves *sailáb* and *nahri* crops from drying up, strengthens the plants and increases the weight and quantity of the produce. In years of exceptionally good rainfall, flat pieces of land adjoining wells in the Thal are brought under cultivation on rain alone, but it is very seldom that any crops can be matured without the help of well irrigation.

4. The floods of the Indus spread over the low-lying tract along the whole of the western side of the district. The Indus, as is well known, brings down enormous quantities of water in summer and it naturally overflows the banks of the winter main stream and runs inland until it is checked by artificial protective embankments, built almost throughout the length of the district. The length of this tract may be taken roughly as 118 miles; its breadth varies from 2 to 9 miles. The water of the Indus carries a good deal of sand with it, and in consequence of the great strength of the current it cuts up and spoils land very quickly while it takes time in silting up depressions made and leaving alluvial deposits. The conditions of the tract throughout the district are very much alike, small plots of land here and there being of superior quality compared with the average lands of the tract. Kharif is grown only on the higher pieces of land which are above the reach of ordinary floods, and the crops usually sown are *jowár*, *bájr*, cotton and *tii*. The principal crop grown in rabi is wheat. Next in importance come gram, *ussun* (*Brassica crucea*) and *massar*. Very little peas and barley are grown. *Massar* and *samukha* are usually sown on newly formed land. Cultivation depends on the *sailáb* (moisture from inundation) helped in places by wells and *jhallars* (Persian wheels) put up on creeks, depressions or ponds. The main stream of the Chenáb confines itself within narrow limits and has consequently cut deep into the ground. The floods of this river do not, therefore, spread far and wide. The tract inundated by the Chenáb is about 127 miles long and varies in breadth from 1 to 6 miles. Its silt deposit is very much richer than that of the Indus and its water is more fertilizing. Similarly to the Indus riverain, cultivation in the tract flooded by the Chenáb depends mainly on the moisture received from the annual rising of the river assisted by wells and *jhallars* put up on creeks, depressions and ponds. The crops grown on the Chenáb are also the same as on the Indus, the only difference being that peas are grown in a much larger proportion here and are used up or sold as fodder, while *massar* is not such a favourite crop. The river called Chenáb is really a collection of the five rivers of the Panjab. At the extreme north-east of the district it consists of the rivers Jhelum, Chenáb and Rávi, and the Ghara (Sutlej and Beas combined) joins it about 12 miles below the north-east boundary of the Alipur Tahsil. The fertility of the Chenáb in the district is due to the rich silt brought down by the Jhelum.

5. The tract lying within the two riverain tracts near the apex of the triangle is called *chāhī sailāb*, because cultivation there-
The chāhī sailāb, in depended at one time entirely on floods assisted by wells. The floods of the Indus used to spread over the whole of the tract during the summer and people used to go about in boats. The Indus protective embankments are however being gradually extended to the south and a considerable portion of the tract has now been protected on the west. The result has been that canal irrigation has been extended down to the centre of this tract. It is only when the floods of the rivers rise very high that the tract not receiving canal irrigation now gets *sailāb*, and what little *sialāb* is received comes not by a direct spill from the river, but through creeks or backwaters. The soil has plenty of saltpetre in it. The favourite crops of the tract are rice on the canal-irrigated lands, followed by peas, and wheat, barley and gram on lands which get *sailāb*. A small quantity of sugar-cane is also raised in the best canal-irrigated villages. This circle is 24 miles long and from 4 to 12 miles broad.

The rabi crops are brought to maturity with the help of wells and *jhallārs* put upon creeks, &c. The wells though a great help cannot be expected to do much in this tract until the lands have been thoroughly soaked by canal or flood water.

6. Lying between the two riverain circles and above the *chāhī sailāb*
The central canal-irrigated tract. is the central tract which is irrigated from canals and contains the best lands in the district. Putting the three tahsils together this tract consists of one compact block 88 miles long and from 8 to 26 miles broad with a cluster of 14 estates isolated at the north-east of the district near Rangpur. The tract includes the Nahri Thal of the Simānwān and the whole of the Muzaffargarh Thal which is mostly canal-irrigated. The soil varies in richness from place to place.

The canals are all inundation canals and depend upon the annual rising of the rivers. They usually begin to flow in the month of May and last till September or October. The canals derived from the Chenāb sometimes cease to flow as early as August. There are two series of canals: (1) The Indus series which are derived from the Indus, and (2) the Chenāb series taken out of the Chenāb. The fertilizing power of the water of each series of canals corresponds to that of the parent river. But while the Indus Canals bring a constant supply for quite six or seven months, the Chenāb series cannot be depended upon for more than four months. The construction of a large perennial canal from each of the three rivers Jhelum, Chenāb and Rāvi is evidently responsible for an early fall of the water-level in the so-called Chenāb. The system of agriculture is more or less alike throughout this tract. The important kharif crops grown are: indigo, rice, sugar-cane, *jowār*, *bājra* and cotton. Indigo flourishes in sandy soil and is more in favour in the canal-irrigated parts of the Thal. Sugar-cane is grown successfully in certain groups of villages, while the other crops are found in varying proportions all over the tract. The principal rabi crop is wheat, while barley is also grown by the poorer peasants. Peas and gram are raised as double crops off rice. Tobacco is grown in small quantities. With the exception of sugar-cane, the kharif crops depend mostly on canal irrigation, while the rabi crops have to be helped to maturity with irrigation from wells, except gram and peas which are grown on rice fields and require no further irrigation. Ordinarily every holding is supposed to possess a well or a share in a well. A portion of the holding, generally one-half, is sown with kharif crops; the other part is ploughed up with the help of canal water and sown with rabi crops in October or November. The well is then put into working order and the wheat or other irrigated rabi crops are watered till the beginning of April, i.e., till the harvesting time.

7. At the north of the district and removed from the rivers lies the
The Thal. high sandy table-land called the Thal, which is at present beyond the reach of canal water. This tract consists of sandhills of varying dimensions with strips of hard land known as *laks* or *pattis* intervening. The land in the *laks* or *pattis* is generally good and is cultivated with the help of wells. The water in about half this tract is brackish and in the other half too, though supposed to be sweet, it is not free of a considerable admixture of salt. In the tract with brackish water, it is not possible to grow any kharif, unless there has been an unusually good fall

8. Little is known of the revenue system of the rulers preceding Diwan Sānwān Mal, except that they took a share of the produce generally in kind, charging cash rates on certain selected crops and adding certain cesses such as *tik* (amounting from Rs. 2 to Rs. 4 per *path*, i.e., 25 to 30 maunds of grain) or *moghla* (amounting from Rs. 3 to Rs. 6 per maund) on indigo, varying with its market price.

9. The main features of Diwán Sánwan Mal's revenue administration were these. He adhered to the share of produce taken by previous Governments, but commuted it into cash at a little (generally 25 per cent.) more than the market price and made the cultivator take back the Government share at the price so fixed. He enhanced the revenue by means of numerous cesses, basing the pitch of the total assessment on a perfect local knowledge of the paying capacity of each individual tax-payer. He paid particular attention to the timely clearance of the canals.

Certain crops such as tobacco, chillies, green wheat used as fodder, peas and saffron were charged cash rates per bigha. Pattadárs or lessees paid a fixed demand varying from Rs. 12 to Rs. 24 plus a *nazrána* of Rs. 2 per annum for each well, but if they cultivated more land than was entered in their respective leases, the crops grown in the extra land were dealt with under the ordinary system of *batáí* (division of produce). Fodder crops were exempt from payment of revenue. Turnips, *jowár* and moth and also *methra* on well lands were so treated and the menials' share of the produce was deducted from the common heap before Government share was divided. A demand on account of *tirni* (grazing dues) was fixed for each village with reference to cattle. The date trees were supposed to belong to Government and the produce was sold to *baikhars* (contractors). Under previous Governments, one-fourth of the income from date trees was paid to the owner of the land, but nothing of the sort was done by Diwán Sánwan Mal, who appropriated the whole of it.

10. The first summary settlement was made in 1849-50, immediately after annexation. Captain Hollings dealt with the Sinánwán Tahsil which had been included in the Leiah District, and Mr. Wedderburn assisted by Lieutenant Farington in Muzaffargarh and Lieutenant James in Alipur assessed the rest of the district. The revenue demand was fixed with reference to the average realizations of Diwán Múl Ráj during the three preceding years. Most of the cesses were abolished. Proprietary rights in the date trees were given to the landowners and a light revenue assessed on the trees. The demand so fixed was—

							Rs.
Sinánwán	...	...	...	...	...	...	1,44,814
Muzaffargarh	...	...	...	...	...	...	2,57,589
Alipur	...	...	...	...	...	...	1,82,737
							<hr/>
					Total	...	5,85,140

The demand began to be rigorously collected and was at once felt as heavy, notwithstanding that reductions of from 10 to 20 per cent. were made at least in the Muzaffargarh and Alipur Tahsils, out of the previous demand, besides the abolition of the so-called vexatious cesses. The complete change from a fluctuating to a fixed assessment and the unpreparedness of the people for a system of assessment whereby they were left completely to look after themselves instead of being helped and guided by the Government officials at each step, and above all a sudden fall in prices resulted in a breakdown of the

assessments. Revenue defaulters were in jail for months, lambardárs resigned, reductions and remissions were largely granted and yet proposals were made to sell villages for arrears of revenue. The severity of the revenue demand was generally recognized and a revision was ordered. Mr. D. Simson, Deputy Commissioner of Leiah, made the second summary settlement of Sinánwán in 1853-54 reducing the demand by $10\frac{1}{2}$ per cent. and fixing the jama of the tahsil at Rs. 1,29,780. Nevertheless the demand was considered to be very heavy and badly distributed. Captain Graham commenced the second summary settlement of the Muzaffargarh and Alipur Tahsils in 1857. The jama of these tahsils had been reduced by the time to Rs. 2,39,113 and Rs. 1,40,582 respectively. It happened to be a year of good harvests and favourable prices, and Captain Graham instead of giving the much needed relief enhanced the jama to Rs. 2,52,790 and Rs. 1,70,432 respectively in the two tahsils. As would have been expected, this settlement broke down in about a year's time. Captain Tighe was appointed to revise the assessment again in 1860. The Sinánwán Tahsil having now been attached to the Muzaffargarh District, Captain Tighe made the third summary settlement of the whole district. The jama of all the three tahsils was reduced and the demand was fixed at the following figures :—

							Rs.
Sinánwán	...	...	...	...	...	...	1,08,660
Muzaffargarh	...	...	...	...	...	...	2,20,592
Alipur	...	...	...	...	...	...	1,41,042
Total							4,70,294

It was during this settlement that revenue was systematically distributed within the villages and khewats were prepared. Notwithstanding the large reductions made, the demand continued to be felt as heavy and unevenly distributed. The reasons were that on the one hand the canals which formed a very important source of irrigation in the district had been left entirely to the people, and clearances, &c., having been neglected, the mismanagement had resulted in a considerable contraction of the water supply, and, on the other, the demand of revenue on lands depending on *sailáb*, which is another very important means of cultivation in the district, was fixed, and no remission in favour of persons whose lands had suffered from the action of the river was permitted. In Sinánwán a series of destructive floods from 1871-74 also greatly affected the paying capacity of the landlords.

11. Mr. O'Brien made the first regular settlement of the district from 1873-80. The revised assessments were introduced from Kharíf 1878 in Sinánwán and Kharíf 1879 in the other two tahsils. The term of the settlement sanctioned by Government was 20 years. Instead of dealing with the lands by talukás or blocks of villages into which the tahsils had been divided in Diwán Sanwau Mal's time, and which had been adhered to in the summary settlements, Mr. O'Brien divided the tahsils into the following assessment circles, with reference to the sources of irrigation, the system of agriculture and other circumstances :—

Tahsil.			Assessment Circle.				
Sinánwán	...	...	Bet	Pakka Cháhi Nahri.	Thal Cháhi Nahri.	Thal Cháhi	...
Muzaffargarh	...	...	Bet Sindh	Cháhi Nahri.	Do.	In Cháhi.	Cháhi Sailáb. Bet Chenáb.
Alipur	...	...	Do.	Do.	...	...	Do. Do.

The riverain tracts including the Bet Sindh and Bet Chenáb Circles together with the Cháhi Sailáb Circles were placed under a fluctuating system of assessment, whereby the cultivated area was measured annually and assessed to a rate per acre fixed for each village. All *sailáb* and *cháhi sailáb* in each circle was assessed at the same rate, a lump assessment being imposed on all wells at work during the year. In the Sindh riverain circles, the *jhallárs* were also assessed similarly to a lump sum; but in the Chenáb and Cháhi Sailáb Circles a separate rate was fixed for *jhallári* lands. The assessment of certain villages in

the Sindh riverain and Cháhi Sailáb Circles was wholly or partly fixed, while in the Chenáb Circles from the extreme north-east of the district down to the junction of the Sutlej and Beás with the Chenáb, the tracts containing wells were given a fixed assessment. The assessment of the remaining circles was fixed, the amount of assessment being arrived at by applying the sanctioned rates to the cultivated area. The rates sanctioned for each circle were these:—

Sanctioned rates per acre.

Description of Soil.	MUZAFFARGARH TAHSIL.					ALIPUR TAHSIL.				SINANWAN TAHSIL.			
	Bet. Chenab.	Bet. Indus.	Cháhi Sailáb.	Thal Cháhi Nahri.	Cháhi Nahri.	Bet. Chenáb.	Bet. Indus.	Cháhi Sailáb.	Cháhi Nahri.	Bet.	Pakka Cháhi Nahri.	Thal Cháhi Nahri.	Thal Cháhi.
Sailába ...	Rs. a. p. 1 2 6	Rs. a. 0 15	Rs. a. 0 14	Rs. a. 0 12	Rs. a. 0 14	Rs. a. 1 1	Rs. a. 0 15	Rs. a. 0 14	Rs. a. 0 14	Rs. a. 0 13	Rs. a. 0 10	Rs. a. 0 8	Rs. a. p. 0 8 0
Cháhi Sailába	* 1 2 6	+ 0 15	* 0 14	* 0 12	...	* 1 1	+ 0 15	+ 0 14	1 6	* 0 13	1 0	...	...
Cháhi Nahri ...	1 12 0	1 12	1 12	1 8	1 14	1 8	1 10	1 6	1 12	1 6	1 6	1 3	+ 22 0 0
Paggu ...	1 4 0	1 4	1 4	1 4	1 4	...	...	1 2	1 4	1 2	1 2	0 15	0 12 0
Jhallári ...	1 4 0	1 2	1 4	1 2	1 2	...	...	...	1 2	1 0	0 14	0 12	...
Cháhi Khális...	1 4 0	...	1 4	1 2	1 4	1 2	...	...	1 2	...	1 0	0 15	\$ 0 12 8

* Plus Rs. 9 per well at work.
 † " " 6 " " and jhallár at work.
 ‡ " " 8 " " at work.
 § Per well.

In tracts subject to fixed assessment provision was made for the levy of a water advantage rate of annas 6 per acre in Sinánwán and annas 8 per acre in the other two tahsils on canal irrigation extended to wells and patti not assessed at settlement as canal irrigated. This assessment was to fluctuate with the area cultivated from year to year with the aid of canal water. At the same time the following rules were framed for the remission of revenue of tracts under fixed assessment in cases of complete failure or successive partial failures of a canal :—

RULES.

I.—No remissions should ordinarily be allowed either for total or partial failure of canal water when the total assessment (fixed and remissible) of the well or patti is much below rates, for it will be considered that the assessment of the holding shows that allowance for such failures has been made in the assessment. The only exception to this rule will be when a severe failure, resulting in large diminution of cultivation or great loss of crops, occurs for several consecutive years. The Deputy Commissioner may then grant some remission if he thinks the assessment, though much below rates, has become temporarily oppressive owing to the continuous failure. But if the assessment is not merely much below rates, but is exceedingly light and trifling in amount, then no remission should be allowed under any circumstances.

Explanation.—The total assessment of a holding will be held to be below rates if the sanctioned revenue rates of the circle (canal and well or canal alone as the case may be) when applied to the average annual cultivated area as ascertained by the settlement measurements and subsequent girdáwaris give a product above such total assessment.

II.—No remission should be allowed if it appears that the applicant has intentionally failed to take water and to cultivate the well or patti in question for the purpose of increasing the cultivation of other wells or patti in which he is interested.

III.—As it is difficult to distinguish irrigation or moistening by river or rain drainage floods from irrigation by canal water all such moistening which has benefited a well or patti will be counted as canal irrigation in dealing with claims to remission.

IV.—When the total assessment of a well or patti is up to, or but little below, the canal and well, or canal alone, revenue rates of the circle, the following rules will apply :—

(1). If no canal water is received during the season, or if the crops sown are entirely spoilt by the canal ceasing to flow, a remission should be granted provided of course that rules II and III do not apply.

(2). If, however, the failure is only partial, that is, if some canal water is received during the season and some crops are grown with its aid, no remission should be allowed merely because the supply has been below the average, for the revenue rates were so pitched as to allow for a considerable degree of fluctuation in the amount of canal water received.

(3). Some remission should, however, be allowed if the partial failure is both severe and continuous, that is, if in two or more consecutive years the supply of water is so scanty and inopportune as to cause much injury either by diminishing the area of cultivation or by preventing the cultivation of the usual proportion of the superior crops or by causing part of the crops sown to dry up."

The administration of the canals which had been unsatisfactory for a long time was in 1880 placed in the hands of an Executive Engineer. The

other rules were revised, a very important change made being the assessment of other (statute labour for canal clearance) with reference to the irrigation of the year, instead of its being made proportional to land revenue. The Government rakhs which had only been marked on maps were now demarcated on the ground and a record of rights was prepared for each rakh securing the rights of Government therein. It was arranged to lease the grazing in the Government rakhs separately and the grazing land attached to villages was assessed to fixed revenue. The jama on dates was raised from Rs. 11,503 to Rs. 19,226. The enhancement of revenue of all kinds made at the first regular settlement is shown below:—

									Old revenue	Revenue announced by Mr. O'Brien.
									Rs.	Rs.
Land revenue	...	...	...	...	...	...	...	...	5,04,970	5,24,468
Grazing	...	...	...	...	...	...	...	...	34,623	33,388
Dates	...	...	...	...	...	...	...	...	11,503	19,226
Total									5,51,096	5,77,082

12. Mr. O'Brien's fixed assessments worked well except in the Thal Circle Working of the regular settlement. of Sinánwán and in a few villages in the Muzaffargarh Tahsil. In the Thal, the assessment was heavy and rigid and provided for no elasticity to meet the difficulties of years of drought. Suspensions had consequently to be granted in successive years particularly out of the grazing assessment of the Sinánwán Thal. Three villages, one in the Bet Sindh and two in the Cháhi Nahri Circle of the Muzaffargarh Tahsil adjoining the riverain villages had been placed under fixed assessment. Being somewhat heavily assessed and being situated at the tail of a canal, they could not stand the strain of successive bad years. The landowners got impoverished and the assessment broke down. Remissions amounting to Rs. 112 had to be granted in these villages in 1883-84, and in 1885-86 they were at the request of the landlords placed under fluctuating assessment and assessed at the rates fixed for the adjoining riverain villages, the revenue demand being thus considerably reduced. Otherwise suspensions or remissions had seldom to be granted, except in the Sinánwán Thal. The only year in which large remissions were necessitated in Muzaffargarh was the year 1894 when floods from the Chenáb broke into the district and caused much destruction of crops and house property. The amount remitted in this year was Rs. 12,934. This was, however, due to an unforeseen calamity and had nothing to do with the working of the settlement.

Under the provision for imposition of water advantage rate of 6 annas per acre in Sinánwán and 8 annas per acre elsewhere on extended canal irrigation, the average assessment for the five years preceding the present settlement amounted to Rs. 6,904, thus:—

				Rs.
Sinánwán 1896-97 to 1900-01	...	...	...	2,607
Muzaffargarh	} 1897-98 to 1901-02	...	...	{ 2,446
Alipur		...	...	{ 1,851
Total				6,904

The income in the Alipur Tahsil was less than in the other two tahsils, because much of the canal extension in that tahsil has taken place in the Cháhi Sailáb Circle, where the lands being subject to a fluctuating assessment were not liable to pay any water-advantage revenue. The increase of revenue was by no means proportionate to the extension of canal irrigation. But it has to be remembered that under the terms sanctioned at last settlement this assessment was to be imposed only on lands belonging to wells and pattis not previously assessed as canal irrigated and that all extension of canal irrigation in villages assessed wholly as canal-irrigated, or in wells and pattis which were treated

is partly canal-irrigated had to remain exempt from any additional assessment. It must also be confessed that no adequate means had been devised for the proper supervision of the working of this rule by the patwáris. The rules for the remission of canal revenue have, owing obviously to their complicated nature, remained a dead letter. Although it is seldom that a canal fails totally in this district, yet it seems difficult to believe that during the past 22 years there was not one single case in which the rules should have been applied.

The placing of the riverain tracts under a fluctuating assessment was the most successful feature of Mr. O'Brien's settlement. The new system gave relief where it was needed, and the assessment of new lands cultivated with the help of *sailáb* was not considered a hardship at all. Under Mr. O'Brien's system a field which failed entirely to mature a crop in either harvest was exempted from assessment, but no remission was made for partial failure of crops. This was felt as a hardship. It sometimes happened that in a field of 40 acres there were only 2 or 3 acres of matured crops, the rest of the crops having failed completely; yet the whole field was assessed at the fixed rate. The fluctuating revenue of the district has, as would be expected, shown considerable improvement. The figures are:—

Last settlement	...	...	...	...	Rs. 1,68,253
Average of five years preceding new assessment...					„ 1,92,510

Some of this increase is due to extension of canal irrigation to tracts placed by Mr. O'Brien under fluctuating assessment.

Notwithstanding the improvements made in it, the *chher* system became a regular grievance and has had eventually to be abolished, as will be noticed further on.

CHAPTER III.—PROGRESS SINCE LAST SETTLEMENT.

13. Of the total area of 2,019,887 acres 14 per cent. is unculturable, 15 per cent. is included in Government Rakhs, and other waste available for cultivation amounts to 46 per cent. Only 509,685 acres (*i. e.*, rather more than 25 per cent.) are under cultivation. The area cultivated at last settlement was 395,275* acres (Statement B). It would thus appear that cultivation has increased 29 per cent. But in consequence of a difference in the system of classifying areas, the comparison is fallacious. The main differences are these. At last settlement the area under crops in one of three harvests was recorded as cultivated. All culturable area not cultivated within three harvests being returned as fallow (*jadid*), abandoned (*uftadu*) or culturable (*qabil ziraat*), while according to the present system the cultivated area includes the area sown in one of the two harvests of the year and also the *khali* and *taraddadi* (fallow and ploughed) not sown with a crop for three harvests. On the other hand, the cultivated area of last settlement, which was the same as the cropped area, did not take account of double-crops or make any allowance for failed crops, while the area now registered as under matured crops includes the former and excludes the latter. Nor can a comparison be made with the sown area as now recorded as the area sown in one of two harvests only is now included in the return of any one year, while the settlement figures relate to the area sown in one of three harvests. But unsatisfactory as the comparison may be, it is best to compare the cultivated area of last settlement with the average cropped area of five years on which the assessments have been based (*i. e.*, years 1894-95 to 1898-99 in Sinánwán and 1895-96 to 1899-1900 in the other two tahsils). This average cropped area is 448,888 acres, *i. e.* only 14 per cent. in excess of the area recorded as cultivated at last settlement. The cultivated area of last settlement was no doubt somewhat exaggerated and therefore the correct increase in cultivation is probably more than 14 per cent. The whole of the uncultivated Thal outside the Government Rakhs (representing about 19 per cent. of the total area) has for the purpose of assessment of grazing dues, been returned as waste available for cultivation, although it is impossible to bring it under cultivation with the present sources of irrigation; and a very considerable portion of the waste in the other assessment Circles is too impregnated

* NOTE.—The figure given in Mr. O'Brien's Settlement Report is 399,267. The difference is due to transfer of villages to other Districts.

with salts to be really fit for cultivation. The area actually available for cultivation is therefore very considerably less than 46 per cent. of the total.

14. Comparing the area under crops recorded at last settlement with the average cropped area of the five years 1897-98 to 1901-02, the proportion of kharif and rabi crops has remained practically the same, thus:—

		<i>Last settlement.</i>	<i>Average of last 5 years.</i>
Kharif	... ..	29·64 per cent.	30·09 per cent.
Rabi	... ..	70·36 „	69·91 „

The proportion of the area under each of the important crops is compared below—

CROP.	AREA UNDER CROP AT LAST SETTLEMENT.		AVERAGE AREA MATURED FROM 1897-98 TO 1901-02	
	Area.	Percentage.	Area.	Percentage.
Rice	10,276	2·59	38,034	8·31
Jowár	20,817	5·24	13,646	2·98
Bájra	17,947	4·51	18,307	4·00
Moth	4,988	1·25	7,425	1·62
Sanwak	2,174	·55	1,244	·27
Samukha	492	·12	52	·01
Til	4,081	1·03	4,694	1·03
Chillies	135	·03	152	·03
Sugar-cane	4,349	1·09	4,187	·92
Cotton	29,711	7·47	18,062	3·95
Indigo	20,830	5·24	19,181	4·19
Wheat	201,783	50·76	213,559	46·68
Barley	10,962	2·76	10,837	2·37
Gram	12,627	3·18	16,118	3·52
Massar	4,245	1·07	6,589	1·44
Peas	25,385	6·38	19,112	4·18
Sarshaf and Ussún	9,047	2·28	8,063	1·76
Tobacco	975	·24	1,225	·27
Methra	1,491	·37	3,685	·81
Other	14,065	3·55	8,723	1·91
Fodder	124	·03	41,832	9·14
Vegetables	1,025	·26	1,954	·43
Fruits ... ..	...	...	834	·18
TOTAL	397,529	100	457,515	100

NOTE.—Last settlement figures taken from Statement D.

The most important variations are the increase in the cultivation of rice and the contraction under cotton. The latter has taken place since 1897 as a result of the impregnation with salt of land in some of the cotton growing tracts, during the destructive floods of 1894. With an abundance of canal water, the cultivation of rice has spread naturally, as the presence of salts in the lands is useful rather than injurious to this crop. The falling off under *jowár* is not real, as some of it has been included in fodder. There are slight decreases under indigo and sugar-cane. Indigo is becoming less popular in consequence of the fall in prices. The cultivation of sugar-cane has largely increased in the Alipur Tahsil owing to a plentiful supply of canal water. In the Muzaffargarh Tahsil, however, there has been a more than corresponding decrease due obviously to the injurious effects of the floods of 1893-94 on the best sugar-cane growing lands. In the Sináuwán Tahsil too, the appearance of some has resulted in a contraction of the already insignificant area under the crop. The area under wheat, which is the most important crop has increased slightly, but the percentage of the area to the total area of matured crops has fallen from 50·76 to 46·68. The deficiency has been made up by an increase in the crops used as fodder. The general tendency appears to be to increase the cultivation of rice and fodder crops, but wheat also takes a share in the extension of cultivation and is not being neglected.

15. The prices adopted at last settlement were based on an average of bazar prices for the years 1854-77, ascertained from the shop-keepers' account books at the principal towns and villages in the district. The prices now sanctioned in the Senior Secretary to Financial Commissioner's letter No. 6156, dated 6th October 1899, for adoption in the assessment reports were also arrived at after a similar enquiry, the gazette prices being discarded as much too high compared with the price which the zamindár realizes for the produce of his land. The prices now used in the assessment reports are compared below with those adopted at last settlement. The prices are stated in rupees and annas per maund :—

STAPLE.	TAHSILS					
	Muzaffargarh.		Alipur.		Sinanwan.	
	Last settlement.	Now.	Last settlement.	Now.	Last settlement.	Now.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Wheat	1 7 0	1 12 0	1 6 0	1 12 0	1 5 0	1 10 0
Barley	1 2 0	1 4 0	1 0 0	1 3 0	1 2 0	1 3 0
Gram	1 7 0	1 8 0	1 5 0	1 8 0	1 3 0	1 8 0
Peas	1 1 0	1 0 0	0 14 0	1 0 0	0 15 0	1 0 0
Massar	1 4 0	1 5 0	1 2 0	1 5 0	1 8 0	1 5 0
Ussún	1 11 0	2 6 0	1 8 0	2 6 0	1 7 0	2 6 0
Tobacco	3 12 0	3 10 0	2 12 0	3 10 0	2 3 0	3 10 0
Rice (unhusked)	1 3 0	1 3 0	1 0 0	1 0 0	1 6 0	1 3 0
Jowár	1 7 0	1 5 0	1 3 0	1 5 0	1 2 0	1 5 0
Bájra	1 5 0	1 10 0	1 5 0	1 9 0	1 5 0	1 7 0
Moth	1 15 0	1 10 0	2 4 0	1 10 0	1 7 0	1 10 0
Másh	1 3 0	1 14 0	2 9 0	1 14 0	2 9 0	1 14 0
Til	2 14 0	3 10 0	2 9 0	3 10 0	3 0 0	3 10 0
Gur	3 7 0	3 5 0	3 10 0	3 5 0	3 8 0	3 5 0
Cotton	3 10 0	4 0 0	3 10 0	4 0 0	3 7 0	4 0 0
Indigo	58 3 0	58 3 0	45 11 0	58 3 0	56 14 0	58 3 0

The rise in prices in the whole district since last settlement may be calculated by comparing the value of the total produce of the tahsils at the two sets of rates. These figures are noted below :—

	Muzaffargarh.	Alipur.	Sinanwán.	District.
	Rs.	Rs.	Rs.	Rs.
Value of produce at Mr. O'Brien's prices,	16,32,014	11,89,576	9,40,691	37,62,281
Ditto at the prices now adopted,	18,25,545	13,88,383	10,68,464	42,82,392
Rise per cent.	11·9	16·7	13·6	13·8

The rise in prices which has ranged from 11·9 to 16·7 per cent. for the tahsils taken separately amounts for the whole district to 13·8 per cent. The chief cause of the rise in prices is the construction of the Sindh Ságar Railway. Different rates were adopted for each tahsil at last settlement and the same course has been pursued now in respect of the following crops :—wheat, barley, rice and bájra. The prices of these grains are highest in Muzaffargarh owing to the proximity of the trading centre of Mooltan. The rates in Sinánwán are naturally somewhat lower as it is more removed from Mooltan. A considerable portion of the produce of Alipur finds its way down to Sukkur by boats, and although the grain which is conveyed up to Muzaffargarh for export by rail has to be sold very much cheaper than at Muzaffargarh, yet the prices of the tahsil are regulated, mainly with reference to prices ruling at Sukkur, and are consequently not very much lower than those prevailing at Muzaffargarh.

16. The main improvement in communications which has taken place since last settlement is the construction in 1886 of the Sindh *Communications.* Sagar Railway which connects Muzaffargarh with Mooltan, and runs north through the Sinánwan Tahsil into the Miánwáli District. The roads in the district are all *kachcha* (unmetalled) with the exception of two bits of 11 miles each, one between Muzaffargarh and Khangarh, and the other on the Mooltan-Dera Gházi Khan road on either side of the town of Muzaffargarh. Traffic is conveyed mostly by camels, pack bullocks and donkeys being also used to some extent. The unmetalled roads are quite good enough for the purpose. Tum-tums ply between Khangarh and Muzaffargarh, and are used largely for the export of mangoes and dates. Wheat, cotton and indigo, which are the principal articles of export from this district, are conveyed up to the railway stations on the Sindh Sagar Railway. Some produce also finds its way to marts across the rivers and wheat is also sent down from the Alipur Tahsil by boats to Sukkur.

17. A systematic enumeration of cattle was made in February 1899, under the orders of the Director of Land Records and *Live-stock.* Agriculture. The results of the enumeration are compared below with the figures for last settlement:—

	Bullocks.	Cows.	Buffalo Bulls.	Buffaloes.	Total Cattle.	Goats.	Sheep.	Total Goats and Sheep.	Ploughs.
Last settlement		248,204			248,204	177,188		177,188	45,606
Now	137,716	128,635	3,930	36,080	306,361	209,390	159,254	368,644	56,515

Unfortunately details of the enumeration made at last settlement are not available, and it is not possible to ascertain the increase under each head, but from the above comparison it appears almost certain that there has been an increase in cattle all round. This is to some extent a necessary consequence of the extension of cultivation and the increase in the number of ploughs. But there is reason to believe that the enumeration made at last settlement was not so careful and systematic, and that accordingly the number of cattle was then understated. This consideration seems to apply particularly to the number of goats and sheep, and it may be assumed that the real increase has not been nearly so great as the figures would show. The total profits from live-stock calculated in the assessment reports are the following:—

	Rs.
Wool and Hair	30,154
Ghi	3,73,619
Sale of Hides and Skins	53,151
Hire of Camels	52,704
Sale of Stock	49,191
Total	5,58,819

That is, the live-stock yields an income of over 5½ lakhs of rupees per annum. The camels, however, belong mostly to non-agriculturists, and goats and sheep and other cattle are also owned in large numbers by persons who do not own or cultivate land. For reasons given in the assessment reports, the income of landowners from live-stock may be put down at the following figures:—

	Rs.
Sale of Wool and Hair... ..	10,046
„ Ghi	2,26,076
„ Hides	33,999
„ Stock	10,543
Total	2,70,664

Population.

18. The population of the district as registered at each census is noted below—

Census.	Population.	Increase per cent. since last settlement.
1868	292,612 *	
1881	334,467 *	14.3
1891	378,387 *	13.1
1901	405,656	7.2

* Figures taken from Assessment Reports.

It will be noticed that population has increased steadily ever since 1868. The progress has, however, not been so marked during the last decade as in the preceding ones. The incidence of population per square mile is 129 now against 109 at last settlement. The following table compares the present density of population with that at last settlement, by tracts :—

Tract	INCIDENCE OF POPULATION PER SQUARE MILE			
	1881 last settlement.		Now.	
	Total area.	Cultivated area.	Total area.	Cultivated area.
Sindh	66	370	84	374
Chenáb	152	455	166	409
Canal tract	164	604	192	611
Thal	15	967	13	940
Cháhi Sailáb	133	664	161	639
District	109	544	129	510

The population of the Thal is very sparse with reference to total area, but it is densest in the district if taken with reference to the scanty cultivation. This is mostly a Muhammadan district, the followers of that religion representing 86 per cent. of the total population in 1901. The Hindús, mostly Aroras, take up the greater part of the remaining 14 per cent. of the population. In some places the poorer Hindús are regular agriculturists, but the majority of them are either shopkeepers or combine trade or money-lending with agriculture. Some individuals or tribes among Aroras, such as Nangpáls of Gurmani and Bajájes of Gujrát, own considerable land. The chief landowning tribes among the Mussalmáns are Jats, including a few Rájpúts, Biloches, Patháns, Sayyads and Kureshís.

Cultivating occupancy

19. The following table compares the cultivating occupancy at the last and present settlements :—

	CULTIVATED AREA PER CENT.	
	Last settle-ment.	Present settlement (1901-02).
Cultivated by owners	57.0	37.5
Do. by occupancy tenants	8.7	4.8
Do. by tenants-at-will	34.3	57.7
Tenants-at-will { paying cash rent	4	5
{ rent in kind	33.9	57.2

These figures would lead to the conclusion that a very considerable portion of the area cultivated at last settlement by owners has now passed

into the hands of tenants-at-will. This result is, however, more apparent than real, and the actual variation has not been anything like so great. The reason is that co-sharers cultivating land in common holdings in excess of their own share and giving a share of the produce to the other co-sharers, as also the mortgagors who cultivate land but pay rent to the mortgagees, have now been returned as tenants-at-will, while all such persons were treated as owners at last settlement. The decrease in the proportion of cultivated area in possession of occupancy tenants is due mainly to the fact that the extension of cultivation has occurred mostly in the holdings cultivated by owners or tenants-at-will. The average rent (*batai*) rate for the whole district works out to 35.1 per cent. of the divisible produce, the similar rate for last settlement being 34.4. The increase in the rate of kind rents has, therefore, been very small (.7 per cent.). The area paying cash rents is so small (.5 per cent.) that no useful comparison can be made on the basis of those figures.

20. The alienations made since last settlement are noted below :—

AREA SOLD SINCE LAST SETTLEMENT.

					To SAHUKARS.		To OTHERS.		TOTAL.	
					Total.	Cultivated.	Total.	Cultivated.	Total.	Cultivated.
Area	...	...	...	...	45,283	17,083	125,404	51,237	170,687	68,320
Percentage	...	...	...	...	2.3	3.5	6.2	10.7	8.5	14.2

AREA UNDER MORTGAGE.

								Percentage of area held by Hindús.
At last Settlement.	Area	...	7,727	3,253	14,730	5,794	22,457	9.047
	Percentage	...	4	8	7	1.5	1.1	2.3
At present Settlement.	Area	...	80,666	37,757	84,912	38,374	165,578	76,131
	Percentage	...	4.0	7.9	4.2	7.9	8.2	15.8

Rather more than 14 per cent. of the cultivated area has been sold since last settlement, the alienations being made largely to the money-lending classes. The area sold to others includes land sold to Hindu agriculturists, but on the other hand the Hindús, who now depend entirely on agriculture, and have been as if assimilated to the Jat fraternity have also sold some land. On the whole, therefore, the cultivated area possessed by Hindús in proprietary right has risen only from 17.5 to 20 per cent. of the total area. They, however, hold about 8 per cent. of the total cultivated area under mortgage now against .8 per cent. at last settlement, and including the Hindu mortgagees falling under "other than *sahukars*" the proportion is still larger. The fact is that a mortgage is looked upon more favourably by the money-lenders than a transfer by sale, as in the former class of transfer they can dictate their own terms with the mortgagors and so can depend upon a certain amount of annual profit without having to suffer losses in bad years. The following table shows the rise in the average mortgage value and sale price of land since last settlement by quinquennial periods :—

				MORTGAGE MONEY PER ACRE.		PRICE PER ACRE.	
				Cultivated.	Total.	Cultivated.	Total.
Before last settlement	...	...	...	42	17	...	...
1880-81 to 1884-85	...	...	...	57	32	52	21
1884-85 to 1889-90	...	...	...	56	25	61	25
1890-91 to 1894-95	...	...	...	60	29	79	30
1895-96 to 1899-1900	...	...	...	61	30	89	36

The value of land has risen steadily and very considerably, although the figures noted above, which have been taken from the statements of yearly totals

of transfer have no doubt been exaggerated, as the consideration money usually entered in the deeds of sale or mortgage is much in excess of the real value of land either in consequence of accumulation of interest which the money-lender adds up at the time of settling his accounts, or owing to a deliberate over-statement of the value in order to frustrate claims for pre-emption. Unlike some other districts, cases of reckless expenditure by landowners are few and far between here, and the marriage and funeral expenses are also by no means very extravagant. The indebtedness of the landowning classes may, therefore, be ascribed to such causes as carelessness, imprudence, litigation, high interest, and losses of cattle and crops in bad years. As wells form a very important feature of the agriculture of this district, it is natural that a peasant should want ready money every now and then for building a new well, repairing an old one, purchasing cattle to replace those which die out and the like purposes, and when he has no money or grain at his command, he must resort to his banker. He must also borrow seed at harvest time. He is, therefore, sure to fall into the hands of the money-lender and be lost by degrees. There is no gainsaying the fact that the advances made by Government for Land Improvements and Agriculturists Loans during the past have been totally inadequate to meet even a fraction of the demands of the agricultural community.

CHAPTER IV.—REVISION OF THE RECORDS.

21. Along with the re-assessment of the district, a special revision of the records of rights was undertaken under Punjab Government Notification No. 1579 S., dated 27th September 1897.
 Field measurements. With the exception of the Sinánwán Thal, the whole of the district was completely remeasured on the square system. For the Sinánwán Thal, two sets of maps were prepared at last settlement, a *thakbast* map for the village showing the boundaries and the positions of wells and the cultivation attached thereto on a scale of 240 *karams* to an inch, and a map on the larger scale of 60 *karams* to an inch for each well. On comparing the *thakbast* maps with the maps prepared by the Revenue Survey Department, it was found that there was no material difference and it was decided to accept the former as correct. Village maps were, therefore, traced from the old *thakbast* (scale 240 *karams* = one inch) and the positions of wells indicated therein. Separate maps of cultivated patches attached to each well were prepared on the usual scale of 40 *karams* to an inch on a modification of the square system. The measurements were commenced in November 1897 and finished in February 1899 in Tahsil Sinánwán, December 1899 in Tahsil Alipnr and January 1901 in Tahsil Muzaffargarh. The field work had to be pushed on vigorously for several reasons. The villages on the Chenáb had to be measured up in the cold weather of 1897-98 in order to compare the boundaries with the Mooltan District, where the work was a good deal ahead of us. In the riverain tracts generally and in such parts of the district as are liable to be affected by *soma* (water logging) measurements could only be carried on during the winter months as the floods in one case and the appearance of *soma* in the other made the working of Survey parties impracticable during the summer. The cultivation in the Thal had also to be measured rapidly by special arrangement as most of the wells are inhabited only in the winter and even then the population being very sparse and the number of men available for assisting measuring parties being limited, it was not advisable to let the Patwaris take their own time. All these ends could be attained only by pushing on the measurements as quickly as possible, and for this purpose it was found necessary to let the patwáris complete the map, the khatauni, the field book, the *naksha chāhīt* at the spot and leave the rest of the *takmil* (completion of papers) to be done afterwards. Some of this work was done during the summer months by patwáris who could not go on with measurements, and the rest was attended to at head-quarters after the completion of measurements. Advantage was taken of this opportunity of having the calculations and other paper work checked thoroughly, and the *misal pai-náyash* (measurement file) was completed as soon after the completion of measurements in the whole tahsil as possible. The final attestation of the khatauni was then undertaken by the Settlement Naib Tahsildars and all mutations sanctioned up to date were given effect to in the khatauni. The Tahsildars and Settlement Tahsildars checked 20 per cent. of the attestation in every village and went over

the whole work if they were not satisfied with its correctness in any particular village. The measurements have been made by means of a chain of 10 *karams*, each *karam* measuring $5\frac{1}{2}$ feet. The measurements of last settlement were also based on the same unit, the only difference being that the chain then used was 12 *karams* long. The measures of area used in the records are:—

1 *karm* = $5\frac{1}{2}$ feet.
 1 *marla* = 3 *karams* square (i. e., 272 square feet).
 1 *kanál* = 20 *marlas*.
 1 acre = 8 *kanáls*.

A measure called *bigha* = 4 *kanáls* was also used at last settlement, and this is no doubt the popular measure by which the peasants make their calculations. It was, however, considered unnecessary to enter it in the new records as the acre is understood sufficiently by the people as equal to 2 *bighás* and is recognised as a measure of area.

22. The total number of villages at last settlement excluding Government *rakhs* (forests) was 727. Of these 42 were transferred to the adjoining districts of Dera Gházi Khan and Mooltan by the action of the rivers from time to time, and 8 villages came over in the same manner. In fixing the boundaries of villages, 9 were joined on to others and 12 new villages were created. There are 73 Government *rakhs* which have been measured separately. There are thus 769 villages altogether (including Government *rakhs*) in the district. The total area of the district by present measurements is 2,019,887 acres. The total area of the villages now included in the district was recorded at last settlement to be 2,007,011* acres, which means an increase of about 13,000 acres or half per cent. This is due partly to the addition to some riverain villages of alluvial lands which were under the river at last settlement and so remained unmeasured at that time, and partly to the more accurate system on which measurements are now conducted. The total area of each village as now ascertained has been compared with the total area recorded at last settlement and at the Revenue Survey. Every case in which the difference exceeded 2 per cent. was carefully looked into. The largest differences occurred in riverain villages or in villages which were split up into separate estates since the Revenue Survey.

The total number of fields entered in the returns of the year preceding remeasurement was 929,417 and the number by the present measurements amounts to 910,260. The number of fields should ordinarily have risen on account of increase of cultivation. The following causes have, however, led to a more or less opposite result. A large reduction in the field numbers was effected by measuring together the habitations and unculturable pieces of land attached to wells which had formerly been measured in small bits, and by treating as one field a whole water-course or a canal throughout the boundaries of a well, while at last settlement these were cut up into several numbers corresponding to the fields through which they passed. The canals now belong to Government and there was no object in cutting them up into bits. The water-courses are generally joint property within the limits of each well or *patti* and no useful purpose could be served by treating each of them as divided into as many parts as the fields through which it passed. Again in riverain lands subject to floods, where the boundaries of fields get effaced almost every year, the fields were made large and coterminous with the proprietary boundaries. The internal divisions get altered every year anyhow, and instead of trying to relay the internal boundaries shown at settlement, it is better that the *Patwari* should measure up the field every year according to the internal divisions that then exist.

The standing record of rights.

23. The standing record of rights which has now been prepared contains the following papers:—

- (1). *Robkár Ibtadai* (Preliminary proceedings).
- (2). *Shajra Nasab* (geneological tree).
- (3). *Jamabandi arazi* (Land *Jamabandi*).
- (4). *Jamabandi Nakhlistán* (Date *Jamabandi*).
- (5). *Jamabandi Bághát* (Garden *Jamabandi*).
- (6). *Fehrist Muafiat wa Pension* (List of revenue assignments and pensions).

* According to Statement B.

- (7). Naksha Haqúq Chahát (Statement of rights in wells).
- (8). Naksha Kassiát Zamíndárán wa Raqba Abpashí Nahri (Statement showing zamíndári water-courses and the area irrigated from them.
- (9). Order of Collector determining the assessment.
- (10). Order of Collector distributing the assessment over holdings.
- (11). List of holdings not assessed as nahri.
- (12). Wajib-ul-arz (Statement of customs or the administration paper).
- (13). Mutation sheets.
- (14). Field maps (shajra kishtwár) (with index map).

The field maps have been stored separately in tin boxes specially made for the purpose. In small villages the genealogical tree and the mutation sheets have been bound together with the other records, but in case of large villages where the bulk of all the papers was too large to be bound up in one volume, the mutation sheets have been bound up separately and the genealogical tree kept in a separate covering. The Chittha Wajib-ul-arz (rough copy of the administration paper) has in the Sinánwán Tahsil been bound up with the mutation sheets, but in the other two tahsils it has been kept separate as it will have to be destroyed, under the rules, after six years. The *misl paimáyash* (measurement file), consisting of the khatauni and the connected statements has been separately filed. The field books have been made over to the patwáris.

24. The genealogical tree prepared at last settlement was attested at re-measurement and brought up to date. The document now filed with the Record of Rights is a copy of the old genealogical tree with additions down to the time of re-measurement. Unlike districts in the Central Punjab, the order of holdings in the jamabandi does not in this district follow that of the *shajra nash* (genealogical tree). The jamabandi is written up by wells and it is only inside each well that holdings can be arranged in the order of the genealogical tree. This was the use made of the paper at the time of preparing the measurement khataunis and the Standing Record of Rights jamabandi.

25. A detailed jamabandi was prepared for the whole district in the summer of 1897, just before the commencement of settlement operations, and this formed the basis of the revision of records. In the Sinánwán Tahsil a jamabandi was prepared directly after the completion of the measurement papers (in 1898-99), and this has formed part of the Standing Record of Rights. But a very large number of mutations had occurred during the progress of settlement operations, and it was considered necessary to prepare a detailed jamabandi in 1899-1900 incorporating all mutations, which had been attested by the end of August 1900. While, therefore, the jamabandi prepared from the measurement khataunis and included in the Record of Rights is correct in itself and represents the state of ownership and possession ascertained at the time of measurement, the jamabandi of 1899-1900 is the more up-to-date record and for all practical purposes better than the Record of Rights jamabandi. The new jama has been entered in this jamabandi as well as the previous jamabandi included in the Record of Rights, and this jamabandi of 1899-1900 will be preserved with the Record of Rights under the orders of the Financial Commissioner. In the Muzaffargarh Tahsil, the preparation of a jamabandi corresponding to the measurement khataunis was attempted in 1899-1900, but the number of villages in this tahsil being very large, and considerable time having lapsed since the preparation of the khatauni in several villages, it was decided that to prepare a jamabandi giving effect to all mutations sanctioned since the attestation of the khatauni would mean much saving of time. A jamabandi was, therefore, prepared in 1900-01 with the entries brought completely up-to-date. The same course was adopted in the Alipur Tahsil and the jamabandi of 1900-01 in these two tahsils has been included in the Record of Rights. Some idea of the mutation work

done during the course of the settlement will be formed from the following figures:—

Year.	Number of mutations attested.					
1897-98	19,339
1898-99	26,907
1899-1900	21,138
1900-01	35,969
1901-02	10,454

26. Besides the land jamabandi we had to prepare a date jamabandi for the purpose of recovery of the date revenue. A similar
 The date jamabandi. date jamabandi was prepared at last settlement, but in preparing the detailed jamabandis thereafter the entries in the date jamabandi were not brought up-to-date. The work of attesting the holdings of this jamabandi, therefore, entailed much labour and necessitated the decision of numerous mutations. The jamabandi now prepared gives the names of the persons owning the land on which the trees stand, the name of the persons to whom the trees belong, the persons enjoying the fruit thereof, the number of trees assessed and the revenue assessed thereon.

27. The assessment of gardens and mango trees separately to revenue necessitated the preparation of a garden jamabandi
 The garden jamabandi. showing the names of owners of the gardens or mango trees who are responsible for payment of the assessment. The jamabandi has been prepared in the same manner as the date jamabandi, with the difference that, while the entries in the latter were attested by Naib Tahsildars and Tahsildars, those in the latter were attested by the Extra Assistant Settlement Officer, this being the first jamabandi of the kind.

28. As part of the statement of rights in wells has been prepared a statement showing the water-courses belonging to zamindárs, and the area irrigated by each. This statement has
 Statement showing zamindári water-courses and the area irrigated by them. been prepared for the guidance of the Canal Officers in regulating the distribution of canal water, and has been made part of the Standing Record of Rights. It is, however, a mere statement of the conditions of canal irrigation existing during the period of this settlement and does not establish any rights of the irrigators to any specified quantity of water or to irrigate any specified area.

29. An elaborate Record of Rights of irrigation in each canal was prepared at last settlement showing, besides the history of
 No record of rights in canal irrigation prepared. the construction of the canal, the villages irrigated from the canal with detail of lift and flow irrigation received by each well and patti, the branches of the canal with details of irrigation from each, the rights of irrigators to put up *chhaps* (temporary dams) across the canals, the *jhallárs* erected on the canals and the arrangement for clearance of the canals by means of statute labour. The circumstances of the inundation canals in this district are similar to those of the Multán District and while the canals were originally constructed by the zamindárs under the guidance of the rulers and were cleared and maintained by them, the control and management of the canals have since 1880, when they were made over to the Irrigation Department, been passing gradually out of the hands of the irrigators and the last semblance of a voice in the management of the canals which the irrigators had in the form of committee of *sarpanches* (representatives) in the matter of estimating the requirements of clearance of each canal and the fixing of the number of *chheras* (labourers) required every year for clearance work has passed off by the abolition of the *chher* system and the introduction of occupiers' rates in lieu thereof. It is therefore on the one hand not wise to tie down the hands of the Irrigation Department by any declaration of rights in irrigation; and the irrigators have, on the other hand, gradually lost the so-called right which they were supposed to possess at last settlement. The question whether a Record of Rights in irrigation similar to that compiled at last settlement should now be prepared was taken up and for reasons given by Mr. MacLagan at length in paragraph 50 of his final Settlement Report of the Multán District, it was decided that it was unnecessary to do so. It was, however, essential to safeguard the

interests of villages which have been assessed to a fixed revenue with reference to their present facilities of irrigation; and it is with a view to give the Irrigation Department an idea of the irrigation of each village on which its present assessment has been based, that the statement of area irrigated by water-courses referred to in the preceding paragraph has been prepared and attached to the Standing Record of Rights. The statement, coupled with the information regarding the area irrigated by each branch canal which it has been arranged to supply to the Department from year to year should be of great help to them in regulating the distribution of canal water in the district.

30. Lists of holdings not assessed as *nahri* have been prepared in tracts under fixed assessment with a view to facilitate the assessment of lands to which canal irrigation is extended. As will be explained hereafter such lands belonging to holdings not now assessed as *nahri* will pay a fluctuating water-advantage rate of 10 annas per acre of matured crops. The lists have been filed with the Standing Record of Rights and will afford a check on the assessment of the water-advantage revenue.

31. The administration paper or *Wajib-ul-arz* now prepared contains a statement of the customs prevailing in each village in respect of matters enumerated in Rule 203 of the rules under the Land Revenue Act. It is a copy of the old *Wajib-ul-arz* omitting portions which related to subjects that have been expressly provided for by law, and embodying alterations here and there to bring the statement in conformity with actual usage. The arrangements for the collection of income from grazing land and the payment of assessment thereon were settled in making the distribution of assessments and the provisions have been copied into the *Wajib-ul-arz*. Two other subjects requiring notice are the *malba* (the village expenses) and the menials' dues. The *malba* rate was fixed for each village at last settlement in accordance with Financial Commissioner's Circular No. W-8, dated 18th January 1860, printed as Appendix D to old Revenue Circular 36. The scale adopted was—

	Rs.
5 per cent. in villages with revenue up to Rs. 500	500
4 " " " " " " " " " " " " " " " "	1,000
3 " " " " " " " " " " " " " " " "	2,000
and 2 per cent. " " " " " " " " " " " " " " " "	over 2,000

The *malba* was collected at these rates by the *lambardār* or *lambardārs* and no account was usually rendered by them to the landowners of either the surplus or the deficit after defraying the necessary expenses. The principal items of expenditure supposed to be covered by the *malba* are the feeding of travellers and beggars, interring of paupers, cost of processes issued against the village, cost of uniform of *chaukidārs* and repairs to boundary pillars and trijunctions. The last three items if large are specially subscribed for. Besides these, some other expenses by way of entertaining visitors are also met from the *malba* which, however, cannot be recognized as lawful. Disputes arose in the beginning regarding the pitch of the *malba* cess and it was my intention to raise or lower the rate for each village in accordance with its requirements. I however found it very difficult to determine the actual needs of each village, and the *zamindārs* were generally opposed to a change. With reference to paragraph 93 of Douie's Settlement Manual, I considered it unnecessary to interfere against their wishes and simply maintained the old rates. It was, however, made clear that the rate prescribed in case of each village was the maximum rate, and the *lambardār* was given liberty to incur expenditure within the limit, subject to the audit of the brotherhood at the end of each year. I do not, however, expect that the village community will exercise their right of audit in many cases and the *lambardār* will in all probability always recover the maximum *malba* and undertake to make up the deficit or pocket the surplus if any. As regards the village menials, the fact of a particular menial being mentioned in the *Wajib-ul-arz* of a village does not make it compulsory for every landlord to entertain him or give the menial the right to recover the dues. The administration papers only contain a statement of what dues each menial receives if employed. In preparing the list of menials for each village, we generally adhered to the list given at last settlement, but it was corrected when it appeared that a certain menial was never employed or that one who was

frequently employed had been omitted from the list. The village servant whose name had been omitted in many cases from the administration papers prepared at last settlement and whose inclusion in the new list was generally objected to is the *kotwāl*. This is a servant who helps the *lambardār* generally in the discharge of his duties and is supposed to have the grain cleaned and sealed before division. The latter duty he is expected to perform towards every landowner who pays him his dues. In practice, however, he seldom performs this duty, except in case of large landowners, who generally have separate *kotwāls* and the former is the main duty which he is responsible for. This village servant is very useful and has become indispensable in most villages owing to the scattered nature of habitations and the fact of the *chaukidārs* not being able to render much assistance to the *lambardārs* in matters other than Police work. In all cases when objections were made, it was found that a *kotwāl* was actually employed and the new entry was allowed to stand.

32. The maps prepared at last settlement were on the scale of 60 *karams* to an inch. New maps had to be prepared throughout the district as the old ones had become obsolete, in consequence of extension of cultivation, partition of holdings, alteration of village boundaries, and other similar changes. The old field maps were, however, found to be very accurate and the village boundary maps (*thakbast*) were of great use in settling boundary disputes.

The new field maps have been prepared on the prescribed scale of 40 *karams* to an inch (i.e., 24 inches to a mile), on English mapping sheets containing 16 squares each. The side of a square is 200 *karams* long. The mapping sheets of a village have been tied together and placed in the District Revenue Record-room in tin boxes together with an index map of the village on a smaller scale of 240 *karams* to an inch (i.e., 4 inches = one mile). A second set of maps on country mapping sheets has been prepared for the use of *patwārīs*, who have also been supplied with a tracing of the original map on strong cloth for the purpose of crop inspection.

Copies of the maps of villages irrigated from canals were made on tracing cloth supplied by the Canal Department and made over to the Executive Engineer, Canals, for the use of his Department. The Executive Engineer has arranged to print several copies of these maps.

The Forest Department has also been supplied with copies of the field maps of the *rakhs* on mapping sheets, and, at the request of the Extra Deputy Conservator of Forests in charge of the Multān Division, copies of the index maps of the *rakhs* have also been supplied to him.

The rough index maps (scale 6 inches to one mile) prepared by the *patwārīs* on finishing the laying down of squares, showed the positions of trijunctions and were checked with the survey maps. All differences of over 2 per cent. in the distances of trijunctions or marked differences in the shape of the boundaries of villages were carefully enquired into, and the field maps of the villages concerned were not finally passed until I had satisfied myself that there were sufficient reasons for difference from the survey maps. The Revenue Survey having, however, been made as long ago as 1855-56, very considerable alterations had taken place in the boundaries of villages and the position of trijunctions in several cases. In many a case a village was split up since the Revenue Survey into more estates than one. Several riverain villages were not measured and blocks of waste then included in villages were subsequently separated into *rakhs* (forests). In a very considerable number of villages the data available for comparison were not complete. The result of the comparison is given below.

	No difference.	Less than 1 per cent.	Less than 1½ per cent.	Less than 2 per cent.	Less than 3 per cent.	Less than 4 per cent.	Less than 5 per cent.	More than 5 per cent.	Total.
Number of trijunctions ...	160	573	144	72	73	45	20	82	1,169

The largest differences are due mostly to alterations in the position of trijunctions of the riverain villages owing to river action.

On completion of the field maps, index maps were prepared by reducing the former by scale to (4 inches=one mile) showing roads, canals, village sites and other details, but no field boundaries. These index maps were put together and copied on tracing cloth into a collective (*mujmili*) map for each tahsil on the four inches=one mile scale. A copy of each of the tahsil *mujmili* maps has been submitted to the Surveyor-General of India for the use of the Survey Department, and a fair copy has also been made for use in the district. From the original collective maps of the tahsils were prepared, by pentagraph, maps of each tahsil on the scale of one mile=one inch and the two miles=one inch. The small scale maps of the tahsils have been put together and made into a district map. The one mile=one inch map of each tahsil and the two miles=one inch map of the district have been lithographed at the Mufid-i-Am Press, Lahore, and will be kept in the District Office for the use of Revenue Officers and for submission with reports when necessary.

In addition to the above-mentioned maps we have had to prepare collective index maps of the riverain tract lying at the western boundary of the Sinánwán and Muzaffargarh Tahsils, and the whole of the Chenáb riverian on the Baháwalpur frontier, the former in connection with the settlement of boundary disputes and the latter for the purpose of laying down a permanent boundary with the Baháwalpur State. An index map of each village has also been pasted into the patwáris' village note-book on a convenient scale, and maps of assessment circles have been placed with the abstract village note-books.

33. A statement of tribal customs was prepared at last settlement in vernacular for each tahsil and appended to the Record of Rights of each village. The customs were re-attested not by tahsils, but by summoning the leading men of each tribe in the whole district together in a meeting. The questions suggested in Sir Lewis Tupper's Customary Law were put to the representatives of each tribe and their answers recorded in vernacular with any examples which could be quoted. The replies of the different tribes have been put together into one volume for the whole district and copies of it have been supplied to the District Judge, the Divisional Judge, and the Chief Court. One copy has been kept in the Revenue Record-room. An English abstract of the customs has also been prepared and published with an introduction as the Code of Customary Law in the district.

34. Village note-books were started for the first time in 1885, and a book was maintained in vernacular for each village by the patwári and another copy was kept in the tahsil. The bilingual village note-books have now been kept in the tahsils, with entries from 1894-95 in Sinánwán and 1895-96 in the other two tahsils, that is for seven years preceding the re-assessment. The patwáris will keep their village note-books in vernacular and have been given new books, from Kharíf 1902, which will last for the term of the new settlement. Bilingual note-books for the assessment circles, tahsils and the district have also been opened with entries corresponding to those of the village bilingual note-books.

The *pargna* or abstract village note-books prescribed by revised Revenue Circular No. 63, paragraph 24, have been opened and statistics of the five years preceding re-assessment have been entered therein. My village inspection notes have, under the instructions of the Settlement Commissioner, been inserted in them, for reference by inspecting officers. The figures of area, crops and wells which formed the basis of assessment have been given in red ink as also those of the fixed land revenue assessed on each village.

35. Besides the work of settling the disputed boundaries of villages inside the district, two important works have been executed in the way of boundary demarcation, *viz.*, (1) the marking of the boundaries of (a) the railway, (b) the canals, and (c) the road under the charge of the Public Works Department, and (2) the laying down of a fixed boundary with the adjoining districts of Dera Gházi Khan and Multán and the

Baháwalpur State. In respect of the railway, the maps now prepared by patwáris were compared with those maintained by the Railway Department. In cases of difference, the land acquisition file was consulted, and it was decided in each case where the correct boundary should be. The maps of the Railway Department were corrected where necessary, and the Railway authorities were requested to shift their boundary pillars, so as to bring them in accordance with their maps. The demarcation of the boundaries of the Public Works Department road leading from Multán to Dera Gházi Khan through Muzaffargarh was not a difficult task. The question of the boundaries of canals was, however, one attended with many complications. Since last settlement most of the canals have been very considerably extended, and the land added to the area recorded at last settlement as under the canal was in most cases acquired without the award of any compensation, sometimes with or sometimes without the consent of landowners. Then the silt thrown up at the annual clearances of the canals had been gradually widening the canal banks and spreading into the adjoining fields. This process goes on from year to year. Some people claimed compensation for the land added to the canals since last settlement, and others demanded that the Canal Department should be asked not to throw the silt and sand at the time of clearance on to their lands. Individual cases were settled with some difficulty, but the case of the canal boundaries now stands generally like this. All land under a canal or its embankments at the time of re-measurements has been recorded as in possession of Government. It is to be supposed that the possession of the land whether it is recorded as belonging to Government or to zamíndárs was duly acquired. Any person claiming compensation for any of this land has to show that the land came into the possession of the Canal Department within the last 12 years. Otherwise adverse possession for 12 years will bar his claim to compensation. Any addition which may have been made to the canal banks since re-measurement must be paid for, or arrangements should be made for acquiring the land by private negotiation without payment of compensation.

36. At last settlement the river Indus formed the boundary between the Dera Gházi Khan and Muzaffargarh Districts. All land up to the bed of the river was measured up and included in this district. Measurements were similarly made as far as the river in the Dera Gházi Khan District at the settlement which preceded that of Muzaffargarh. The river was supposed to be measured on neither side, but the course of the river being not exactly the same during the settlement of Dera Gházi Khan and that of Muzaffargarh, many plots of land got included in villages on either side of the river. Boundaries of villages were fixed and the transfer of a piece of land to one or the other side of the river did not involve any change in the proprietary rights. Nevertheless, whole villages were transferred from one district to the other for convenience of administration, on account of changes in the course of the river. A comparison of the boundaries of villages was undertaken during the recent settlement of the Dera Gházi Khan District with a view to having a fixed boundary of the two districts. The difficulties experienced in the work were thus described by Mr. Diack in paragraph 78 of his final Settlement Report. "In the case of Muzaffargarh and Dera Gházi Khan boundary, more difficulty was experienced. The boundaries of riverain villages in the two districts were not compared at Regular Settlement and consequently many pieces of land were measured as portions of the Dera Gházi Khan villages in the one settlement and portions of Muzaffargarh villages in the other, while much land in the bed of the river was left unmeasured in both settlements and became the object of much contention when thrown up by the river. All questions connected with such land have, with the exception of three cases, been disposed of by the Deputy Commissioner of Muzaffargarh and myself in concert. The three cases will be finally decided at the settlement of that district (Muzaffargarh) now in progress." The three remaining cases were taken up during this settlement and have been decided in consultation with the Deputy Commissioner, Dera Gházi Khan. By Punjab Government Notification No. 553, dated 11th September 1897, the common boundary of the villages enumerated in a list appended thereto was declared to be the common boundary

Fixed boundary with Dera Gházi Khan, Multán and Baháwalpur.

of the two districts and the common boundaries of all the villages having now been determined a complete common fixed boundary has now been arrived at between the two districts. It may be noticed here that in measuring the riverain villages of the Sinánwán Tahsil it appeared that the boundary of the border villages of the Dera Gházi Khán District shown on the Dera Gházi Khan maps did not correspond to that existing on the ground. These cases were taken up and after much discussion and enquiry decided by the Deputy Commissioner of Dera Gházi Khan and myself without dissent, with the exception of one case which had owing to our difference of opinion to be referred to the Commissioner of the Division. With the Commissioner's permission steps were taken to correct the maps of the Dera Gházi Khan District. The case of the boundary between the Multán and Muzaffargarh Districts was also similar. Most of the villages had fixed boundaries, but the area in the bed of the river had been left unmeasured, and at the settlement of each district the area as far as the river had been measured as belonging to that district. Seven villages, however, had the ever changing deep stream boundary modified by the rule of avulsion or (*chakkars*). The question of having a fixed boundary for these villages was taken up on both sides, and after some difficulty the majority of landowners in all the villages but one agreed to have a fixed boundary and referred the determination of the boundary to arbitration. The boundary thus arrived at was put down in the revenue records as the fixed boundary. The boundary in the remaining case was fixed under the riverain Boundaries Act, Punjab, I of 1899. Proceedings were also undertaken under the Act in the other cases where the rule of deep stream had governed the boundary so far, and the boundary fixed by consent of parties and by the award of arbitrators was declared to be the permanent boundary.

The boundary with the Baháwalpur State lay on the Chenáb river and was throughout governed by the modified deep-stream rule. The deep stream had to be determined every year and numerous petty and sometimes very serious and complicated disputes arose from time to time in respect of alluvial land, avulsed land and *mahaz* lines, (lines projecting towards the river), involving the waste of much time and labour. Following the course adopted in laying down a fixed boundary between Dera Gházi Khan and Baháwalpur, I was directed in Settlement Commissioner's letter No. 197, dated the 29th January 1901, with reference to paragraph 7 of Revenue Secretary to Punjab Government's letter No. 121, dated 2nd November 1900, to arrange in communication with the Baháwalpur authorities for determining a fixed boundary between Baháwalpur and Muzaffargarh on the principle that the boundary of that year according to previous custom should be accepted as the permanent boundary for purposes of jurisdiction and that where the river flowed between the two States the existing river bed should be equally divided between them. In order to have a complete map of the whole boundary and all points in dispute, the squares laid down in the boundary villages were taken down to the river and across it to the Baháwalpur villages. The whole riverain tract was measured up jointly by the officials of the two sides and from the filed maps (on 40 *karams* = 1 inch scale) of the villages measured up, a collective index map on the 4 inches to a mile scale was prepared. This map which showed the deep-stream of 1900-01 formed the basis of our decision. The boundaries of *chakkars* (avulsed land) which had been previously settled from time to time were first overhauled and agreed to after much haggling and discussion, but it was in the drawing of the *mahaz* lines (*i. e.*, projecting the boundary lines towards the river and determining the area to be divided) that the chief dispute arose. After much trouble, however, all the disputes were amicably settled and a fixed boundary was agreed upon with the Baháwalpur State with the exception of a village, Betwaghwar, at the extreme south in respect of which the Baháwalpur authorities wished to press a claim which they had made originally against the Dera Gházi Khan District. The boundary agreed upon was accepted by the Punjab Government in their letter No. 112, dated 3rd March 1903, and the disputed case about Betwaghwar between Muzaffargarh, Dera Gházi Khan and Baháwalpur was finally decided by the Punjab Government in their letter No. 591, dated 29th May 1903, the boundary proposed by me being accepted. The whole boundary between the two States has now been fixed. The zamíndárs

were consulted in the settlement of the boundary and the landowners in the opposite villages have agreed in each case to the boundary decided upon. The boundary of the two States forms the boundary of proprietary rights. The question of proprietary rights in land transferred by the boundary settlement arose only in one case (*viz.*, that of Kachilál) where a large area in proprietary possession of the owners of Kachilál at last settlement went over to the Baháwalpur State. The dispute was settled on a promise of the Mashir Mal to have a grant of proprietary rights sanctioned by the State to the persons recorded as owner of the land in our settlement papers. The fixed boundary has been marked on the ground as far as possible and steps have been taken to erect permanent marks to facilitate the laying down of the boundary which is now under the river, whenever the land is alluviated. This settlement of the boundary has put an end to an immense amount of work in the way of boundary disputes which often resulted in serious quarrels between the landowner on opposite sides.

CHAPTER V.—THE NEW ASSESSMENT.

A.—THE AMOUNT OF THE ASSESSMENT.

37. A general re-assessment of the Muzaffargarh District was sanctioned in Government of India's letter No. ²¹⁵⁹/₂₆₄₂, dated 17th September 1897, and the Punjab Government authorized the re-assessment and special revision of Records of Rights of estates included in the district.

In Senior Secretary to the Financial Commissioner's letter No. 13 C, dated 25th May 1891, to the Revenue Secretary to Government, Punjab, the Financial Commissioner estimated that the re-assessment would probably result in an increase of Rs. 1,10,000 per annum and this estimate was accepted by His Honour the Lieutenant-Governor, in Punjab Government letter No. 915, dated 28th July 1897. Douie's Settlement Manual was published, while the settlement was in progress, and, although part of the work had then been completed, yet the proceedings during the settlement were regulated generally by instructions laid down in that book.

38. The names of assessment circles into which each tahsil has been divided for purposes of assessment are noted below, together with the names of the corresponding assessment circles adopted at last settlement.

Tahsil.	Present assessment circle.	Corresponding assessment circle adopted at last settlement.
Sinánwán	Thal	Thal-Cháhi.
	Thal-Nahri	Thal-Cháhi-Nahri.
	Pakka	Pacca-Cháhi-Nahri.
	Bet (Sindh)	Bet.
Muzaffargarh	Thal	Thal-Cháhi-Nahri.
	In-Cháhi.	In-Cháhi.
	Cháhi-Nahri.	Cháhi-Nahri.
	Cháhi-Sailáb.	Cháhi-Sailáb.
Alipur	Bet-Chenáb.	Bet-Chenáb.
	Bet-Indus.	Bet-Indus.
	Bet-Chenáb.	Bet-Chenáb.
	Bet-Indus.	Bet-Indus.
Alipur	Sindh	Sindh
	Chenáb	Chenáb
	Pakka	Pakka
	Cháhi-Sailáb	Cháhi-Sailáb

The assessment circles now adopted were approved by the Financial Commissioner in his Senior Secretary's letter No. 4959, dated 14th August 1899. In the Sinánwán and Alipur Tahsils, the assessment circles fixed at last settlement have been maintained with slight alterations in boundaries and a little abbreviation in the nomenclature. In the Muzaffargarh Tahsil, however, the In-Cháhi and Cháhi Sailáb-Circles have been dispensed with. The villages included at last settlement in the former circle have now been grouped with those of the Thal, Chenáb and Pakka Circles, while the old Cháhi-Sailáb Circle has been absorbed into the Chenáb, Sindh and Pakka Circles. The present conditions of the villages then included in either of the abolished circles are in

no way different to those of villages of the assessment circles to which they have now been attached respectively. As the river Indus flows along the whole western boundary of the district, each of the three tahsils has a Sindh circle comprising the riverain tract flooded annually by the Indus. The Muzaffargarh and Alipur Tahsils being bounded by the Chenáb on the east have each a Chenáb (riverain) Circle, and the Pakka or canal-irrigated central tract is common to all the three tahsils. The Cháhi-Sailáb Circle depending on well irrigation helped by a spill from the rivers is peculiar to Alipur, while the Thal Circle of Sinánwán, where patches of cultivation in the sandy deserts depend solely on wells, has no parallel in the other two tahsils. The Thal of Muzaffargarh is similar to the Thal-Nahri of Sinánwán, being mostly irrigated by canals and partly by wells. Taking the whole district together, there are the following assessment circles:—Chenáb, Sindh, Pakka, Thal-Nahri, Thal and Cháhi-Sailáb, and this classification is based upon the considerations noted in paragraphs 2 and 4 to 7 (Chapter I). A map of the district showing the assessment circles is appended.

39. The classification of soils for purposes of assessment and for the preparation of Revenue records has been based entirely on sources of irrigation, neglecting the natural differences in the quality, composition, and fertility of the land. In a comparatively rainless tract like this, so much depends upon the water-supply, that it was not possible to give primary importance to the constituent of soils. A similar classification was found necessary at last settlement and, although the Settlement Record then prepared took note of the natural distinctions of soils, yet that classification was not kept up in the Revenue records prepared since. For the purpose of assessment, only six classes have now been adopted, viz., *cháhi*, *chahi-nahri*, *nahri*, *sailáb*, *chahi-sailáb* and *ábi*, as these were practically the classes under which crops had been registered since last settlement; but in consequence of the substitution of an occupier's rate on canal irrigation for the system of canal clearances by *chher* (statute labour), it was found necessary to go into greater detail and to note in the Revenue papers every class of cultivation depending upon canal irrigation with or without irrigation from other sources and to distinguish between lift and flow irrigation in each case, as the former is to be charged at half the rates sanctioned for the latter. The following classes of soils have been sanctioned by the Financial Commissioner for adoption in the preparation of revenue records:—

Classes of soils.

- | | |
|------------------------|--|
| (1) Cháhi | Land irrigated by well only. |
| (2) Nahri | Do. from canal by flow. |
| (3) Jhallari | Do. do. by lift. |
| (4) Cháhi-nahri ... | Nahri land also irrigated by wells. |
| (5) Cháhi jhallári ... | Jhallári land also irrigated by well. |
| (6) Sailáb | Land receiving moisture from the river. |
| (7) Chahi-sailáb ... | Sailáb land irrigated by wells. |
| (8) Ábi | Land irrigated by lift from a pond or creek. |
| (9) Nahri-ábi | Ábi land receiving canal irrigation by flow. |
| (10) Jhallári-ábi ... | Do. do. do. by lift. |
| (11) Bārání | Land dependent solely on rain. |

(Vide Senior Secretary to Financial Commissioner's letters No. 3336, dated 19th July 1902 and No. 4105, dated 3rd July 1903).

Muzaffargarh being one of the seven districts in which no permanent distinctions of soil were noted (Director of Land Records and Agriculture's Circular letter No. 9, dated 6th July 1897), the classification available in the Revenue records of years preceding this settlement was only temporary and related to the conditions existing in the two harvests of each year. As at last settlement so now, the permanent classification of soils and the soil rates have been utterly neglected in framing the assessments which have been based entirely on the cropped area and crop rates. Moreover, the nature of irrigation in the district from canals and from wells which are used mostly to supplement canal irrigation or *sailáb* is on the whole so variable that a permanent classification of soils with reference to sources of irrigation does not signify much. The classification of soils sanctioned by the Financial Commissioner will, therefore, be observed with reference to the crops irrigated in the harvests of each year.

40. It was not safe to base the assessments on the cultivated area recorded in any one year during the re-measurements and the cultivated area recorded in the papers from year to year before the commencement of this settlement neither showed the full extent of lands capable of cultivation nor represented the area on which the cultivators had grown successful crops; for under rule (iii) printed in paragraph 37 of old Revenue Circular 28 all area not bearing crops was to be returned as uncultivated in this district, while on the other hand the area on which crops had failed was included in cultivation. An average of the figures of cultivated area for several years would also, therefore, not be of much use. It was considered best to calculate the assessments on the area of matured crops in order to proportion the land revenue as far as possible to the actual profits of the landlord. The area under matured crops again varies so largely from year to year, that it would not be fair to base the calculations on the figures of any one year. The average of a number of years was, therefore, taken as the basis for calculating the assets of the landlord and the assessment. For reasons given in the Assessment Reports, the following periods were taken as representing an average cycle of years in each tahsil:—

Sinánwán 1894-95 to 1898-99.

Muzaffargarh and Alipur 1895-96 to 1899-1900.

The average area of matured crops registered in these years is noted below by tahsils.

						Acrea.
Sinánwán	...	...	...	...	...	118,702
Muzaffargarh	...	...	...	...	...	188,138
Alipur	...	...	...	...	...	150,127
Total District	...	...	...	...	...	456,967

41. Before proceeding to work out the outturns, it was necessary to see that the allowance for failed crops had been correctly made. The following figures show the average area of crops sown and failed during the five years above referred to:—

Tahsil.					Area sown.	Area of failed crop.	Percentage of the area of failed crop to total area sown.
					Acrea.	Acrea.	Percentage.
Sinánwán	...	...	...	...	122,673	3,971	3·2
Muzaffargarh	...	...	...	...	201,180	13,042	6·5
Alipur	...	...	...	...	160,489	10,362	6·5
Total District	...	...	...	...	484,342	27,375	5·7

It was recognized that the failure of crops had been under-estimated in the years preceding this settlement. Leaving alone the calamities of season, the causes of failure of crops in tracts secure from inundation are principally the appearance of *soma* (i.e., water-logging), the spread of saltpetre, the injury done by date palms and roadside trees, besides the general causes of failure of canals, want of rains, and crop diseases. In the Sinánwán Tahsil no allowance for the inadequate estimate of failed crops was made in arriving at the average cropped area, but in working out the half-assets of the canal-irrigated circle it was shown that the damage done by water-logging and similar causes by way of reducing the outturn of crops might be estimated at Rs. 13,000 per annum there. A small reduction from the total value of produce was made on account of damage done to crops by date trees, which have multiplied very largely and have been assessed to revenue. In the other two tahsils it was considered preferable to reduce the cropped area of the Pakka Circles by 5 per cent. in order to counterbalance the under-estimate of *kharāba* in the records of past years. No such course appeared necessary in the Thal Circle or in the other circles which were placed under fluctuating assessment. After

making the above-mentioned reductions, the following areas of crops were taken as the basis of assessments.

Tahsil.	Average area sown.	Area of failed crops.	Average area of matured crops.	Percentage of failed area to area sown.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Percentage.</i>
Sināwān	122,673	3,971	118,702	3.2
Muzaffargarh	201,150	17,909	183,271	8.9
Alipur	160,489	13,574	146,915	8.5
District	484,312	35,454	448,888	7.3

42. It is customary in this district to allow the whole of the straw of wheat and other crops to the tenant, for the feed of his bullocks, besides which he is allowed to use up a certain proportion of the fodder crops while they are green. The landlord does sometimes take a camel load or so of straw for the use of his own cattle, but this is only by way of grace, and he cannot claim a share of the straw unless he is prepared to make a proportionate reduction in rent. Carrots and turnips are used entirely as fodder almost everywhere in the district, so is *methra* (fenugreek). Nearly half the *jowār* crop is eaten up as fodder. About 12 per cent. of *moth* and 7 per cent. of peas have been taken as consumed by bullocks. More than half the crops returned as fodder, and some 16 per cent. of crops registered as others, have also been included in the crops intended for the use of bullocks. The rest of the fodder is utilized for the feed of cows, buffaloes, horses, &c., and need not be deducted from the area of crops which go to make up the owner's assets. A small proportion of green wheat is also allowed invariably to the bullocks, but the quantity varies with the amount of work which is done. In purely *chāhā* tracts the proportion allowed is the largest, while on wells assisted by canals or floods it is smaller and on *nāhri* and *sailāb* lands the allowance is only nominal. The total area of each crop for the district and the proportion allowed by way of fodder are noted below.

Crops.	Total area.	Area allowed as fodder.	Percentage.
Turnips and carrots	1,908	1,908	100
Methra	2,612	2,612	100
Jowār	15,480	7,878	50.9
Fodder	25,774	15,637	62.5
Others	6,531	1,069	16.4
Moth	8,737	1,034	11.8
Peas	26,560	1,783	6.8
Wheat	218,209	5,424	3.5

The total area of crops allowed as fodder amounts to 8.3 per cent. of the average area of matured crops.

43. The materials available for judging the outturn of different crops on different soils were—(1) the rates of yield adopted at last settlement and (2) the results of crop experiments performed in the district since the commencement of the settlement, i.e., Rabi 1898. The former were somewhat out-of-date and no results of crop experiments performed before the commencement of the settlement being available, the latter, which were too few in number and which extended over very few harvests and covered a very small area on the whole, could not be entirely depended upon. Moreover the results of crop experiments have hitherto been more or less exaggerated in consequence first, of the tendency of local officers to select good crops notwithstanding the instruction that only average crops should be selected for experiments, and, secondly, of the fact that as soon as a field has been reserved for crop experiment, all pilfering and waste become impossible for fear of prosecution. With a view to arrive at a correct estimate of the average outturn of crops, a representative meeting of zamindars was held in each tahsil and in presence of the Extra Assistant Settlement Officer

the Tahsildar and the Naib Tahsildars, the outturns of crops were freely discussed with them with reference to the rates of yields assumed at last settlement, those adopted at the recent settlements of the neighbouring districts of Dera Gházi Khan and Multán and the results of crop experiments made in the district during the course of this settlement. The opinions of the zamíndárs were then noted down and later on these figures were tested with the account books of some Hindu landowners out in the district. The outturns assumed in the Assessment Reports were arrived at after all the above deliberation and are given in the following table for the more important crops :—

Outturn assumed.

Crops.	Sailáb.	Cháhi Sailáb.	Abi.	Nabri.	Cháhi Nahri.	Cháhi.
	<i>Mds.</i>	<i>Mds.</i>	<i>Mds.</i>	<i>Mds.</i>	<i>Mds.</i>	<i>Mds.</i>
Wheat	5 to 6½	7 to 9	7 to 9½	6 to 7	8 to 10	6 to 9
Rice ... ..	...	...	...	10 to 14	...	...
Cotton	2 to 2½	3 to 3½	3 to 3½	2½ to 3½	3½ to 4½	2 to 3
Sugarcane ... ..	...	...	...	10 to 14	12 to 16	...
Indigo ... ..	...	...	...	<i>Ses.</i> 11 to 13	...	...

The outturns are given by soils. They vary from one assessment circle to another and consequently the maximum and minimum rates adopted have been given.

44. Certain dues have to be paid to the menials, who supply additional labour at harvesting times and execute necessary repairs to well gear, ploughs, &c., all the year round or assist agriculture in other ways. Some of these are paid at the time of reaping the crop and others before the produce is divided between the landlord and tenant. The percentage of the gross produce deducted on this account is noted below.

Sinánwán ... ..	...	...	...	...	...	15
Muzaffargarh ... ..	...	...	...	...	...	14.5
Alipur ... ..	...	...	...	...	...	11.8
District ... ..	...	...	...	...	...	13.7

The principal menials are the carpenter, blacksmith, potter, winnow, *lailhar* (reaper), *gahera* (thresher), *dubir* (weighman), *kotana* (rope-maker) and *rákha* (watchman). The Mullan and Brahmin have to be paid before all the menials. Some of these men get their dues on all classes of land, others like the potter and rope-maker are entitled to a share of the produce of *cháhi* and *jhallári* land alone. The rates are also different for different circles. The amount allowed to each menial was fixed after careful local enquiry.

45. The value of produce was arrived at in the following manner. The gross produce was found out by applying the average rate of yield assumed for each crop to the average matured area ascertained to have borne that crop less the amount allowed for fodder. Deducting the menials' dues, the balance of the produce was converted into cash at the prices sanctioned for adoption by the Financial Commissioner (*vide* paragraph 15). The total of sums thus obtained for all the crops went to make up the value of the divisible produce, which amounted for the whole district to Rs 44,27,458. This sum was taken as representing the probable value of the divisible produce of the district in an average year.

46 As has been noticed before 37.5 per cent. of the total cultivated area is *khud-kasht* (i.e., in possession of the landlords themselves), while nearly 58 per cent. of the area is with tenants paying rent in kind. This makes up rather more than 95 per cent. of the cultivated area. The surest standard for judging the profits of the landlord was, therefore, the rent in kind paid by tenants. The rent paid on each holding was ascertained at re-measurement and averages for the villages and assessment circles were arrived at. It was found that the landlord received rent at the average rate of 34.8 per cent. of the divisible produce. In dealing with rent, it has to be borne in mind that there are two classes of proprietors, the superior (*ala*) and the inferior (*adna*) and that, while the inferior

proprietors receive the *mahsul* (rent) above alluded to, the superior proprietors receive a percentage either in cash, calculated on land revenue or in kind with reference to the total divisible produce of the land. In some cases the superior and inferior proprietors are the same; in other words, there are no separate overlords. There are thus three classes of superior proprietors :—

- (1). Others than inferior proprietors, receiving their due in cash.
- (2). Others than inferior proprietors, receiving their due in kind.
- (3). Who are also inferior proprietors and receive their due in kind.

It appeared that the fees received by the first two classes were extremely small (*i.e.*, *satté parvé*, Re. 1-12-0 for every Rs. 100 of revenue, or *pai path* = $\frac{1}{6}$ of the divisible produce) and had evidently been fixed on the understanding that this profit would not be assessable and that the inferior proprietors would take the responsibility of paying the whole revenue. Besides, it would have led to complications, if the insignificant assets of the two first classes were included in rent. It was, therefore, decided to leave those two classes alone, but to include in rent the dues received by the third class of superior proprietors. This addition resulted in raising the percentage of rent to 35.1 of the divisible produce. Applying this rate to the value of the whole of the divisible produce the landlord's share amounted to Rs. 15,55,074. From this sum were deducted Rs. 26,051 in the Muzaffargarh and Alipur Tahsils on account of expenses connected with the repair and maintenance of wells and the clearance of long water-courses, which are defrayed by the landlord alone. The net assessable assets of the landlords were, therefore, taken as Rs. 15,29,023, thus :—

Name of Tahsil.	Total value of divisible produce.	Owner's share.	Deduct owner's expenses.	Net assessable assets of landlords.
	Rs.	Rs.	Rs.	Rs.
Sinanwán	10,73,232	3,32,014	...	3,32,014
Muzaffargarh	19,53,816	7,59,241	17,777	7,41,464
Alipur	14,00,410	4,63,819	8,274	4,55,545
Total	44,27,458	15,55,074	26,051	15,29,023

47. According to the above calculation, the half-net assets of the half-assets and other landlords would amount to Rs. 7,64,512. Increasing the standards, value of the total divisible produce (Rs. 44,27,458) proportionately to the allowance made for menials' dues, the gross produce should be valued at Rs. 51,30,311. One-sixth of this would be Rs. 8,55,052. Another standard for judging the revenue which could now be assessed is the sum that would be assessable on the present cultivation at the rates levied at last settlement increased proportionately to the rise in prices. The cultivated area of the present day is not the same as that at last settlement, and while our average cropped area (which is the more reliable figure) is probably somewhat smaller comparatively than the cultivated area recorded at last settlement, the cultivated area of to-day is decidedly a wider term than it was at last settlement and includes a larger figure. These two figures are—

Average cropped area	448,888 acres.
Cultivated area (1901-02)	509,635 "

Applying the average settlement rate to both the areas and adding 13.8 per cent. on account of rise in prices we get Rs. $\frac{670,471}{761,270}$.

It has not been found possible to make any useful estimate of surplus produce with reference to the figures of export. The produce of the district is exported (1) by Railway to Multán, (2) by boat to Sukkar and (3) by pack animals to markets across the rivers to the Multán and Dera Gházi Khan Districts and the Baháwalpur State. The figures available are only those of export by rail and consequently no attempt has been made to compare the surplus produce with that exported.

48. The land revenue sanctioned in the Assessment Reports was The revenue sanctioned. Rs. 6,32,321, while that actually assessed amounted to its pitch. Rs. 6,65,491 (fixed Rs. 3,11,586, fluctuating Rs. 3,53,905). The difference is due mainly to the fact that in actual assessment, the revenue of the tracts placed under fluctuating assessment was based on the cropped area of the latest year, while that worked out in the Assessment Reports depended on the

area of matured crops in an average of years. The revenue assessed amounts to 87 per cent. of the half-assets, 78 per cent. of the one-sixth of gross produce, 99 per cent. of the previous rates standard if applied to the average cropped area and 87 per cent. of it if applied to the present cultivated area. The new assessment gives an increase of over 28 per cent. on the assessment of last settlement and of about 20 per cent. over that of the year preceding the revision of assessment. The details of revenue and rates are given by assessment circles and tahsils in Appendix No. IV.

B.—METHOD OF ASSESSMENT OF REVENUE.

49. A system of fluctuating assessment was introduced at last settlement for all lands directly affected by the annual risings of the rivers. This system appeared to have been successful and it was decided to continue it for such tracts with some improvements. Of the tracts protected from floods by embankments, the sandy tract of the Thal which is beyond the reach of canal irrigation appeared to have suffered much from the inelastic fixed assessment under which it was placed at last settlement, and it was necessary to devise some system for it which should have the advantages of a fluctuating assessment without the complication of a field to field assessment every year, which is not suited to the conditions of the peasants of this tract. The greater part of the canal-irrigated tract enjoys a more or less regular supply of canal water assisted by irrigation from wells, and was considered suited to a fixed assessment. The Pakka Circle of the Alipur Tahsil, however, has not been so fortunate of late as the Puran, an inundation canal which irrigates nearly the whole of the Circle, has had its head cut away and has not been so regular in its supply. Wells have also come to be more or less abandoned here and the conditions of irrigation and accordingly of agriculture are much more uncertain. With a few exceptions, therefore, it was considered best to place the whole of this tract under fluctuating assessment, similar to that introduced in the riverain circles. Three systems of assessment have thus been introduced in the district:

- (1) The system of fixed assessment.
- (2) The ordinary system of fluctuating assessment.
- (3) The Thal system of assessment fluctuating by holdings and shares.

50. The central canal-irrigated tracts of the Sináwán and Muzaffargarh Tahsils (i. e., the Pakka and Thal Nahri Circles) have as before been given a completely fixed assessment. The assessment of parts of two villages in the Muzaffargarh Sindh and parts of sixteen villages in the Muzaffargarh Chenáb, which lie inside the protective embankments, has also been fixed, while one village in the Alipur Pakka and part of one in each of the Alipur Chenáb and Sindh Circles have also been placed under the same system. These tracts have a fairly constant supply of canal water and the rabi cultivation is almost invariably assisted by wells. A fixed assessment was, therefore, considered to be quite suited to the conditions of these villages and circles. The whole land revenue demand of these lands, from whatever source they may be irrigated, has been fixed for the term of settlement and no part of it will fluctuate from year to year. The demand fixed for each assessment circle is given in Appendix IV and the revenue rates on which the fixed jama has been calculated are printed in Appendix III. The fixed demand will be liable to alterations in the following cases:—

- (1). Certificates of exemption will be granted to new wells constructed and old wells repaired under the rules contained in Appendix VIIa.
- (2). Remissions of water-advantage revenue will be granted under rules given in Appendix VIIb.
- (3). Remissions will be granted on wells going out of use under rules printed in Appendix VIIc. These rules have been proposed by the Settlement Commissioner (in his letter No. 60 C, dated 4th April 1903 to the Senior Secretary to Financial Commissioner) but have not received the sanction of Government.
- (4). Lands to which canal irrigation is extended will be assessed to a fluctuating water-advantage revenue in the manner described in paragraph 54.

Any land subject to fixed assessment which happens to be eroded by the river will be exempted from assessment, and when it is thrown up again and brought under cultivation, it will be assessed to fluctuating revenue similarly to lands in the nearest village under fluctuating assessment.

51. The ordinary system of fluctuating assessment consists in assessing the area of matured crops (after deducting *khadda*) at a rate fixed for each crop in a whole assessment circle or group of villages. Crops have been grouped generally into two classes, Class I including the rich crops of wheat, tobacco, cotton, indigo, chillies, vegetables, fruits and sugar-cane, and Class II all the other crops. The rate for crops included in Class I has everywhere been pitched considerably higher than that for Class II. Crops matured from whatever source of irrigation (*viz.*, whether *sailāb*, *nahri*, *chāhi-nahri*, *chāhi*, *chāhi-sailāb*, or *ābi*) will be charged at the same rate. A lump assessment has been fixed for every well or *jhallār* to be paid only when it is at work. A well or *jhallār* shall be considered at work when it irrigates one acre or more of matured crops during one agricultural year. Certificates of exemption will be granted under rules given in Appendix VIIa., This lump assessment called *abiāna* is not only different in different villages, but it has been raised or lowered from well to well inside one and the same village. The following table shows the maximum, the minimum and the average rate of *abiāna* imposed per well and *jhallār* in each assessment circle:—

		WELLS.								JHALLARS.							
		Sinānwān.				Alipur.				Sinānwān.				Alipur.			
		Bet.	Chenāb.	Sindh.	Pakka.	Chenāb.	Sindh.	Pakka.	Chāhi-Sailāb.	Bet.	Chenāb.	Sindh.	Pakka.	Chenāb.	Sindh.	Pakka.	Chāhi-Sailāb.
Sanctioned	...	5	9	6	7	7	4	5	3	5	5	4	7	6	3	5	5
ACTUALLY IMPOSED.	Maximum	8	16	12	10	15	23	28	10	7	14	10	4	10	6	8	8
	Minimum	1	2	1	2	1	1	1	1	2	1	1	3	1	1	1	1
	Average	6	8½	6	7	7	6	5½	4	4½	5	4½	4	6	3½	4	4

This system has been introduced in the whole of the Alipur Tahsil with the exception of one whole village and parts of two villages, the Sindh circles of Sinānwān and Muzaffargarh (except parts of two villages in the latter), six villages (including parts of three) in the Muzaffargarh Pakka, and the Chenab Circle of Muzaffargarh with the exception of parts of sixteen villages which have been placed under fixed assessment.

Throughout the Sindh riverain, the same set of rates (*i.e.*, Class I, Re. 1-4-0, Class II, Re. 0-12-0; Class III, Re. 0-6-0 per acre) has been adopted, *i.e.*, from the extreme north of the Sindh Circle in Sinānwān down to the extreme south of the Alipur Sind, the classes of crops will pay the same rates. The differentiation from village to village will consist in the larger or smaller proportion of high or low class crop, while that from field to field will result from the allowance made for failure of crops. The floods of the Indus are so capricious in their nature that the best lands in that riverain may be converted in one year into worthless sand, while in the course of a few years the sandy bed of a stream may be turned into good culturable land. This is why no more differentiation was considered necessary throughout the length of the Sindh Circles. On the Chenāb, however, conditions are different, and while clusters of villages consist of rich and very productive land, others have inferior land with plenty of saltpetre in it. The rent rate also decreases as we go down from the Muzaffargarh into the Alipur Chenāb. In the Chenāb Circles of Muzaffargarh and Alipur, therefore six groups of villages have been made with graduated rates varying from Class I Re. 1-14-0, Class II Re. 1 per acre to Class I Re. 1-4-0, class II Re. 0-14-0 per acre.

To accord lenient treatment to land newly cleared up with the help of *sailāb*, a third class has been provided for the Sindh Circle including *moosar* and

samukka, which are the crops mostly sown on newly broken up lands on the Indus. This class will be assessed at half the rate for second class crops, *i.e.*, at 6 annas per acre. In the Chenáb Circles, however, no particular crops are specified for new lands. Nevertheless the fact remains that sowing a newly broken up field means a lot of trouble and that the produce in the first year is not full. Following the practice which had existed since last settlement, it has been decided to charge crops on newly broken up land (*nautor*) at half the rate fixed for that crop in that group of villages. This concession will be made only for the first year. The same system has been extended to the Cháhi-Sailáb and Pakka Circles of Alipur and six villages* of the Muzaffargarh Pakka, but as no diluvion is possible in these circles, no provision for leniency to *nautor* crops was needed, nor was a third class of inferior crops necessary. In these circles, where there are considerable differences of soil and means of irrigation, the rates have been graduated similarly to the Chenáb Circles. The rates fixed for each group in the different assessment circles are given in the table below.

ASSESSMENT CIRCLE.	GROUP I.		GROUP II.		GROUP III.		GROUP IV.		GROUP V.		GROUP VI.	
	Class I.	Class II.	Class I.	Class II.	Class I.	Class II.	Class I.	Class II.	Class I.	Class II.	Class I.	Class II.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Chenáb (Muzaffar- garh).	1 11 0	1 0 0	1 12 0	1 0 0	1 10 0	0 14 0	...	...	...	...	...	...
" (Alipur)	1 8 0	0 14 0	1 6 0	0 14 0	1 4 0	0 14 0	...	...	...	...	...	...
Pakka "	2 4 0	1 2 0	2 0 0	1 2 0	1 12 0	1 0 0	1 8 0	0 14 0	1 6 0	0 12 0	1 4 0	0 10 0
Cháhi-Sailáb ...	1 6 0	0 14 0	1 4 0	0 12 0	1 2 0	0 10 0	...	...	...	...	...	...
Pakka Muzaffar- garh.	1 14 0	1 0 0	1 12 0	1 0 0	1 6 0	0 14 0	...	...	...	...	...	...
Sindh, of all three taluils.	1 4 0	0 12 0	Class III. 0 6 0									

* Three whole villages and parts of three.

52. The Thal system has been introduced in the Thal of Tahsil Sinánwán, in four villages of the Pakka of Tahsil Muzaffargarh which depend entirely on wells, and in parts of three villages of the Thal Circle of Muzaffargarh which are beyond the reach of canal irrigation. Altogether the system has been extended to twenty-seven whole villages and parts of three. In the whole of this tract all cultivation depends on well irrigation and all cultivated area is attached to one well or another. These areas attached to wells are divided into specified holdings or shares and a holding or share in a well is either brought wholly under cultivation or left entirely untouched. The conditions of this tract are peculiar. The holdings are small with reference to the cultivated area, and the cultivation is uncertain and not very profitable. While on the one hand the landowners cannot stand a fixed demand, on the other they are too ignorant and poor for a fluctuating field to field assessment. The system of assessment introduced may be described as follows: Every well holding, whether cultivated or not, has been assessed to a sum as land revenue, and this sum will be recovered whenever the area sown with crops in a whole year is not less than half an acre in a share of or a holding inside a well and one acre in an entire well. Wells newly constructed or cleared from *dals* (old disused wells) will get certificates of exemption from payment of revenue for varying terms under the rules, and the whole of the revenue of the holdings attached to such wells will be irrecoverable during the period of exemption. The total revenue assessed on the tract amounts to Rs. 6,120. The assessments have been so framed that the holdings under cultivation should on an average of five years have given a revenue of Rs. 4,698. Any well which is newly constructed in the *shamilat* (common waste) will after the expiry of the period of exemption pay a revenue of Rs. 8 if fully at work. Every peasant will thus know the exact amount of revenue which he will have to pay if he undertakes to cultivate his land, and will at the same time have the advantage of not being called upon to pay any revenue at all during the years when owing to drought or other causes he cannot afford to bring his land under the plough. Detailed rules regulating this system of assessment are given in Appendix VII D.

53. There are some valuable gardens in the district, and the mango trees are a source of considerable income. In many places they belong to or are mortgaged to others than the owners, or mortgagees of land. It was unfair that the owner of land should pay the whole assessment, while the owner of the garden or trees enjoyed the large profits without contributing anything at all towards the Government demand. A fixed assessment has, therefore, been imposed on the gardens and detached mango trees as part of the fixed assessment in tracts subject to fixed assessment and as a separate fixed demand in the Pakka Circle of Alipur which has been placed under fluctuating assessment. The trees and gardens in the riverain tracts and the Cháhi-Sailáb Circle which are not numerous have not been separately assessed and will only pay land revenue at the crop rates fixed for first class crops. The total garden jama is Rs. 7,417 distributed as follows:—

	Rs.
Sinánwán	984
Muzaffargarh	5,077
Alipur	1,356

This revenue will be remissible wholly or in part in case of deterioration or destruction of the garden or mango tree under the rules given in Appendix VII F.

54. At last settlement it was arranged that all land broken up with the aid of canal water in wells and pattis not assessed as canal-irrigated should be assessed to a fluctuating jama at a rate of 6 annas in Sinánwán and 8 annas in the other two tahsils per acre sown with crops. A similar provision has now been made and a uniform rate of 10 annas per acre has been sanctioned for extended canal irrigation. It was, however, noticed that the increase in revenue from this source in past years was not at all commensurate with the increase of canal irrigation. The rule exempting whole wells and pattis from assessment on extended canal irrigation was

unnecessarily liberal for owners of divided holdings who were assessed to no revenue, and who in case of cultivation of their lands, with the aid of canal water, remained exempt from assessment because one of the owners in the well or *patti* paid a small revenue for his *nakri* cultivation. It has now been decided to charge the water-advantage revenue on all land irrigated from a canal in holdings not assessed as canal-irrigated. This revenue will fluctuate from year to year with the area of matured crops. A list has been prepared in every village, of holdings which have not been assessed as canal-irrigated or which are lying waste and have been assessed to no land revenue. A copy of this list has been filed with the Settlement Record and another has been retained by the patwari who will send up a statement every year with his annual papers, showing how much land has been irrigated in each such holding, and on how much area crops have been matured. This statement will afford an effective check on these fluctuating assessments. The rules as sanctioned by Government are given in Appendix VII E.

55. In villages which have been placed under fixed assessment, provision has been made for the introduction of a fluctuating assessment during the currency of this settlement if (1) the numerical majority of the proprietors (excluding mortgagees) ask for it, or (2) the revenue due from any considerable portion of the holdings has fallen into arrears, or (3) the Deputy Commissioner thinks that the village is better adapted for a fluctuating assessment. In such cases a report will be submitted for the sanction of the Financial Commissioner.

56. The revenue fixed and fluctuating as now assessed is compared by assessment circles in Appendix IV, with the half-assets jama, the revenue assessed at last settlement and that realized in the year preceding the revision of assessments. Briefly the land revenue now assessed is Rs. 6,65,491 :—

	Rs.
Fixed	3,11,586
Fluctuating	3,53,905

against Rs. 5,18,035 assessed at last settlement and Rs. 5,56,834 recovered in the year preceding the announcement of revised assessments. The increase has been 28 and 20 per cent. against the two figures, respectively.

57. There is a very large number of date trees in the district which form a source of regular income to the owner. An assessment of Rs. 22,839 was sanctioned for female trees in the whole district at last settlement, but in announcing his assessments Mr. O'Brien, the then Settlement Officer, did not find it practicable to go above Rs. 19,126. This jama was subsequently reduced on account of transfer of villages to adjoining districts but adding the date revenue assigned, the date jama of the villages now included in the district amounted to Rs. 19,133. An enumeration of date trees was made in August 1899 and again in August 1900 and the number of female trees then ascertained formed the basis of the present assessment. The following figures explain themselves :—

					Sinánwán.	Muzaffar- garh.	Alipur.	District.	
Last settlement	...	{	Trees assessed	...	116,049	237,080	90,676	443,805	
			Revenue	...	Rs. 3,691	11,101	4,341	19,133	
			Rate per tree	...	" 0-0-6	0-0-9	0-0-9	0-0-8	
Present settlement.	{	Number of female trees	...	...	184,422	470,105	184,472	838,999
			Sanctioned...	Revenue	...	Rs. 10,960	21,687	8,646	41,293
				Rate per tree	...	" 0-0-11	0-0-9	0-0-9	0-0-9
				Imposed	Revenue	...	" 8,354	21,739	8,906	38,999
			Rate per tree		...	" 0-0-9	0-0-9	0-0-9	0-0-9
Increase per cent. on assessment of last settlement					126	96	105	104	

It will be seen that while the number of female trees has increased by nearly 89 per cent. since last settlement, the revenue has been more than doubled. It may be noted that, calculating the profits from an individual tree, they appear to be fairly large, but when a large number of trees has to be dealt with, the net profits of the owner are found to be comparatively smaller. Basing the calculation upon estimates and the rates sanctioned at last settlement, a rate of 1 anna per female tree was proposed for the greater part of the Sinánwán Tahsil. In announcing the assessments, however, it appeared that, in consequence of the very large increase in the number of trees, the increase brought out by the above mentioned rate would be excessive and would be acutely felt. The assessments were, therefore, pitched lower, giving an average rate of 9 pies per tree in that tahsil. The assessments proposed for the other two tahsils were more moderate and the total assessments imposed on female date trees in the whole district gives an incidence of 9 pies per female tree. The increase in date revenue amounts to 104 per cent. over the assessment of last settlement. The rates levied in individual cases vary from 2 pies to 1 anna 3 pies per tree. Not only is the rate different for different villages, but within one village different blocks have been treated differently and assessed at a higher or lower rate. The assessment is a fixed one subject only to a remission for revenue-paying trees which might be washed away by one of the rivers. The present assessment is a full one and appeared at the announcement of assessments to be all that could be paid by the owners without difficulty. If the number of trees goes on increasing at the same rate as it has done since last settlement, the enhancement of revenue at the next settlement will have to be made very cautiously.

58. The grazing land attached to villages measured 1,000,308 acres at last settlement and was assessed to Rs. 32,644. The present waste area is 920,404 acres. The assessment now imposed on this grazing land is Rs. 27,843 (fixed Rs. 10,771, fluctuating Rs. 17,072). The decrease in revenue is justified by the decrease in the waste area which has been brought under cultivation, and the large increase of revenue which has been obtained from the cultivated lands and the date trees which grow mostly on the waste area. Were it not for the advisability of retaining a separate grazing assessment in the Thal, it might have been convenient to throw this small sum into the land revenue and abolish a separate grazing assessment. The measure would have been a popular one with the peasants, and might be adopted with advantage at the next settlement. The assessment is fixed in tracts under fixed assessments or under the Thal system of assessment and will fluctuate from year to year in tracts which have been given a totally fluctuating assessment. In the former case, the total assessment has been fixed for each village, in the latter a rate per 100 acres of waste has been fixed and will be levied on the area recorded as waste every year. In the Sinánwán Thal, where the grazing revenue forms a very considerable part of the total revenue, the number of cattle varies very largely with the rainfall and in years of drought the capacity of landowners to pay the grazing revenue is very seriously affected. In this circle the grazing assessment announced will be treated as the maximum revenue recoverable and in bad years such remissions will be granted by the Collector subject to the control of the Commissioner as appears necessary in each village. The rules sanctioned by Government are printed in Appendix VII H.

59. The total revenue for all sources will now be as follows :—

The revenue from all sources and forecast of the probable financial results of the new settlement.	Land Revenue including gardens.	in- { Fixed Rs. 3,11,586 Fluctuating „ 3,53,905 }	Rs. 6,65,491
	Dates fixed	„ 38,999	
	Revenue on grazing land.	{ Fixed „ 10,771 Fluctuating „ 17,072 }	„ 27,843
	Total	„ { Fixed „ 3,61,356 Fluctuating „ 3,70,977 }	
			„ 7,32,333

The figures of fluctuating revenue are only estimates based on the cropped area of 1900-01 in Sinánwán and 1901-02 in the other two tahsils. They will vary from year to year with the area of matured crops, and if *kharaba* is liberally deducted as it is intended to be, the revenue should largely decrease

in bad years, while, on the other hand, years of copious floods and steady canal irrigation in Alipur should lead to extension of cultivation and consequently to an enhancement of revenue. The above figures are compared in Appendix V with the revenue assessed at last settlement and that recovered in the year preceding the revision of assessments, as also with the revenue which should have been assessed at the sanctioned rates. The increase compared with last settlement amounts to Rs. 1,62,521, or 29 per cent., while the above figures are Rs. 1,25,547, or 21 per cent. in excess of the revenue realized in the year preceding the revision of assessments. The estimate of increase made in the forecast report of this settlement was Rs. 1,10,000, so that the expectation has been more than realized.

The figures of 1902-03, which was a distinctly bad year for tracts under fluctuating assessment, show a decrease of about Rs. 20,000 in land revenue compared with the above estimate, thus—

Fluctuating Land Revenue sanctioned in Statement B.	Rs. 3,53,905.
Fluctuating Land Revenue 1902-03 including revenue remitted on certificates of exemption...	„ 3,33,592.

It will be safe to expect that the total revenue of the district will vary from Rs. 7,00,000 to Rs. 7,50,000 and that it may rise higher with extension of cultivation.

C.—INTERNAL DISTRIBUTION OF REVENUE.

60. In tracts placed under fixed assessment the land revenue to be paid by each village was arrived at with reference to the sum which, at my village inspections, I considered the village capable of paying, after taking all the circumstances into consideration, the half assets jama of the village worked out separately for each village in Tahsil Sinánwán, or calculated at the guide crop rates sanctioned for the other two tahsils, and the revenue that should have been assessed on it at the revenue rates sanctioned for the assessment circle. The former two were the main guides as the last figure had to be raised or lowered according as the village was above or below the average. Indeed, what I did was to total up the assessments proposed by me in my inspection notes for the different villages. The total was compared with the sanctioned revenue and generally came very near the mark. The difference was made up by altering my figures with reference to the half assets jama. In framing my village assessment I went freely above and below the sanctioned rates according to the circumstances of individual villages.

61. Having arrived at the village assessment, I proceeded to assess the wells and *pattis* in the following manner: In the Sinánwán Tahsil I had with one solitary exception seen every well and *patti* that had to be placed under fixed assessment. These I had classified in each village with reference to the quality of soil, means of irrigation, vicinity to markets, resources of the owner and other considerations affecting the paying capacity of a landowner. In making my inspections I had noted what ratio the rate per acre assessed on one class of wells and *pattis* should bear to another. In the other two tahsils, I had not the time to do all the well inspections myself, but I trained the Settlement Tahsildars and made them do exactly what I had done in Sinánwán. At the time of my village inspection I checked some 20 per cent. of the classification done by them, and also inspected every well or *patti* regarding which the owners differed from the opinion of the Tahsildar and representatives of the village and decided which class it should be placed in. Where I was not satisfied with the classification, I had it done over a second time and checked it again. I then had well lists prepared, showing particulars of cultivation, the average cropped area of seven years and the class in which each well and *patti* had been placed at the time of inspection. Separate all-round rates were adopted for each class with reference to the ratio noted in my inspection note and the assessment thus arrived at for each well or *patti* was raised or lowered with regard to all the circumstances of that particular well or *patti*. The sums so fixed for different wells and *pattis* were increased or decreased proportionately until the total assessment to be imposed on the village was obtained. After announcing the total assessment of each village,

I proceeded to determine the assessment of each well or *patti* and discussed the case with the landlords as if it were a village. I did not hesitate to vary the amount put down by me against each well or *patti*, if with reference to the hundred-and-one reasons that were put forward before me, I was satisfied that the assessment ought to be more or less. If, after determining the assessment of the wells and *pattis* individually, I found that I had lost a few rupees in the total assessment of the village, I did not try to make up the difference, but announced that I had reduced the total by so much.

62. Directly the assessment of wells and *pattis* was finished, the work of distribution of assessment over holdings was taken in hand. For this purpose materials had been prepared before hand. A *fard bâchh khâtewâr* had been prepared showing the cultivated area and the average cropped area for seven years for each holding. The general rule adopted was to distribute the revenue fixed by me for each well and *patti* on all its holdings uniformly with reference to the cropped area, except where I had noted that particular holdings were to be assessed higher or lower than the others. Where certain holdings had shares in well irrigation and others had not, a sum obtained by multiplying the area irrigated by the well with the difference of the *châhi nahri* and *nahri* rates was deducted from the total assessment, and spread over the area so irrigated, the balance being distributed evenly on all the holdings. This work was completed in a few hours after I had announced the well and *patti* assessments, and the Extra Assistant Settlement Officer announced the distribution by holdings to the zamindârs. Cases where the distribution of revenue on cropped area resulted in undue leniency to lazy co-sharers who had land equally good with that of their brothers, or those in which the co-sharers objected to the method of distribution, were brought to my notice and I decided at once, with due regard to the circumstances of each case whether the revenue should be distributed with reference to the cropped area or the cultivated area, or if it should be apportioned according to the original shares of the partners in the common holding. The announcement of the assessment of a village and its distribution over wells and *pattis* and then over holdings thus took one day or in case of large villages two days at most. It meant much hard work, but saved the people the trouble of assembling over and over for the distribution of revenue, and gave every landowner the satisfaction of discussing his case personally with the Settlement Officer.

63. With the exception of the Sindh Circle where one set of crop rates has been adopted throughout the whole length of the district, graduated sets of rates have been introduced in all the assessment circles which have been placed wholly or partially under the (ordinary) system of fluctuating assessment. The lump assessment on wells and *jhallârs* has been varied from village to village and also within the same village. This differentiation which required much care and consideration was done in the following manner. The villages included in an assessment circle were first divided into groups with reference to the productiveness of the lands and other considerations and an average lump assessment was fixed for each village taken as a whole. In forming the groups the fertility of the lands of the adjoining villages had to be borne in mind, and when lands of similar quality happened to fall within two groups, because they were situated in two villages which differed from each other taken collectively, the difference was made up by charging on the lands placed within the lower group a comparatively heavier *abîânâ*, i.e., by fixing the lump assessment at a somewhat larger rate per acre of irrigated crops. Much minute comparison had to be made in fixing the lump assessment in different villages and different groups with a view to ensure equality of treatment regarding similar lands lying in different villages which adjoined each other. This necessitated the comparison of the *abîânâ* assessed on the wells, &c., lying near the boundaries of each village with that assessed on every one of the wells of other villages adjoining the boundary. At the same time the lump assessment had to be very largely raised or lowered within each village to differentiate sufficiently between good and bad wells whose lands were to pay revenue at the same crop rates. The lump assessment was fixed not only with reference to the quality of land and the crops raised on the

well or *jhallár*, but also to the area irrigated by it on an average of years. This involved much time and labour but resulted in an equitable differentiation of good and bad lands under fluctuating assessment.

64. The distribution of the demand for grazing revenue of a village has been arranged in one of three manners—
Distribution of the grazing assessment.

- (1) where the demand is small and the grazing area limited, the landowners have agreed to pay the demand ratably to land revenue;
- (2) where the grazing area is large and the cattle grazing in the village belong mostly to the landlords, or where large pieces of waste belong to a few men who allow cattle from other villages to graze there on payment of *tirni*, the landowners have usually agreed to distribute the grazing assessment on the waste area; and
- (3) where the grazing area is large and cattle are numerous and belong to others than landowners, it has been arranged that the cattle should be enumerated every year by Munsiffs appointed for the purpose, and the following fees charged per head:—

	Cows	Cow buffaloes.	Goats and sheep.
	Annas	Annas.	Annas.
Sinánwán	5	10	1
Muzaffargarh and Alipur	4	8	1

Similar rates fixed for collection of *tirni* at last settlement within the villages were 6 annas per cow, 12 annas per buffalo, and 1 anna per goat or sheep. The collections will be paid into treasury towards the grazing revenue and any deficit will be made good by the landowners in proportion either to their land revenue or their waste area, according to the understanding arrived at in each case. Similarly the surplus, if any, will be divided among all the landowners. It has also been arranged in some cases to group together a number of villages for the payment of *tirni*. The total grazing demand of these villages will remain unaltered, but this sum will be capable of re-distribution periodically over the villages included in the group with reference to the number of cattle, either on the basis of the quinquennial enumeration made under the orders of the Director of Land Records and Agriculture, or on an enumeration in the intervening years in cases of necessity. This system has been adopted experimentally in a few cases, but should be further extended if it proves successful, as it saves cattle from having to pay *tirni* in a number of villages. In some cases, groups have been formed without any provision for re-distribution of the demand, each village agreeing to pay its demand without making any collections from cattle coming from other villages of the group.

D.—OTHER MATTERS CONNECTED WITH THE ASSESSMENT.

65. The instalments for payment of revenue will be the following throughout the district:—

Instalments.						
Kharif	...	...	...	...	...	{ 15th December. 15th January.
Rabi	...	...	...	...	...	{ 15th June. 15th July.
Date revenue	...	...	...	...	...	15th August.

No alteration has been made in the time of the instalment for payment of date revenue as the fruiting season ends in the beginning of August, and the middle of that month is very appropriate for payment of revenue from this source. The other instalments have been put off by a fortnight in each case to allow sufficient time for the sale of produce and in case of fluctuating assessments to enable the assessment and *báchh* papers to be completed. In villages under fluctuating assessment, the revenue to be paid at each harvest will be that assessed on the crops of that harvest. In some of the riverain villages, however, where the area of Kharif crops is very small it has been laid down that the whole land revenue shall be

paid in Rabi. The grazing revenue will be collected in Rabi, as it will not be possible to ascertain the waste area until after the Rabi crop-inspection. In the villages placed under the Thal system of fluctuating assessment where the Kharif crops are insignificant, the whole land revenue will be paid in Rabi while the grazing revenue will be collected in Kharif, as the end of summer is the time when the number of cattle grazing in the Thal is largest, particularly if the Thal has been blessed with rain. In tracts placed under fixed assessments, it has been decided in case of each village what proportion of the revenue should be paid in each harvest with reference to the area under autumn and spring crops. The amount to be collected at each harvest will be divided equally into the two instalments fixed for that harvest. The whole date revenue will be collected in one instalment. For sugarcane-growing villages a third Kharif instalment was formerly allowed in February, but this has now been dispensed with as unnecessary, as the second Kharif instalment (15th January) will be quite late enough.

Cesses. 66. The cesses sanctioned at last settlement were —

	Per cent.
Patwáris	3 to 6
Lambardárs	5
School	1
Road	1
Dák	$\frac{1}{2}$
Local rate	$6\frac{1}{2}$
Total	$16\frac{3}{4}$ to $19\frac{3}{4}$

The maximum for the patwáris' cess was 6 per cent. with 8 to 12 annas per cent. as stationery allowance. The rates gradually went nearer the maximum. The local rates were consolidated later on and a rate of Rs. 10-6-8 per cent. of land revenue was sanctioned including the School, Road and Dák cesses, Roughly speaking the cesses being paid before revision of assessment were about 21 per cent. of the revenue. An uniform patwári cess of Rs. 6-4-0 per cent. (including the stationery allowance) has now been sanctioned and, leaving the other rates intact, the following cesses will be charged in future for every Rs. 100 of revenue:—

	Rs. a. p.
Lambardár	5 0 0
Patwári	6 4 0
Local rate	10 6 8
Total	21 10 8

67: With the exception of one *jágir* consisting of the revenue of village Lálpur, under fluctuating assessment (which amounted to Rs. 2,873 last year and should at the revised rates have brought in Rs. 3,609) enjoyed by Nawáb Abdullah Khan and others of Dera Ismail Khan, the assignments in the district are all petty *máfis* continued mostly for maintenance of institutions like *khangahs* (tombs), *takids* (resting places) or *dharmshalas*. The case of each *máfi* was investigated. There were some petty assignments which had been granted in 1858 by the Chief Commissioner to individuals in perpetuity or during maintenance of gardens. There appeared to be no use or reason for the continuance of most of these, and as it was held by the Punjab Government in 1879 (*vide* Punjab Government letter No. 1052, dated 22nd September 1879) that the Chief Commissioner could only grant *máfis* for term of settlement or for life under the rules laid down in Revenue Circular No. 37, such of those *máfis* as should have lapsed under the rules were now confiscated, while recommendations were submitted for the continuance of such of them as were attached to institutions. Other cases requiring fresh sanction were also duly reported and orders of the Financial

Commissioner and Punjab Government were obtained. The assignments which have now been continued are shown in the table below :

Tahsil.	Amount assigned before revision of assessment.			Amount now assigned.		
	In perpetuity.					
Muzaffargarh (Lalpur)	...	...	...	Rs. 2,873	a. 0	p. 0
					Rs. 3,609	a. 0 p. 0

For life term of settlement or during maintenance of institutions.

Muzaffargarh	...	...	...	...	...	274	0	0	381	0	0
Alipur	...	...	...	...	...	121	7	0	164	0	0
Sinánwán	...	...	...	...	...	33	0	0	20	0	0
Total	...	...	...	...	...	3,301	7	0	*4,174	0	0

{	*Fixed Rs. 453	...	...	...	{	Land revenue	221	0	0
					{	Dates	232	0	0
	Fluctuating Rs. 3,721	...	...	...		Land revenue.			

Notwithstanding a decrease in the number of petty assignments, the total assigned land revenue has increased in consequence of the general rise in the assessment.

68. Assessment has been deferred in this settlement only in case of wells newly constructed. Exemption from the *chāhi* assessment has been granted for the full term of twenty years to wells which have been built to irrigate lands not previously assessed at irrigated rates and for a term of ten years to wells which have been constructed to replace old wells. The exemption was calculated in the following manner in tracts under fixed assessment. In respect of wells irrigating lands which depend entirely on well irrigation, the whole revenue of the lands irrigated from the new well was remitted for the period of exemption. Where the lands received canal water or *sailāb*, the remission given amounted to the difference between the revenue at *chāhi-nahri* or *chāhi-sailāb* rates and that which would have been paid on the area commanded by the well at *nahri* or *sailāb* rates respectively. In tracts under totally fluctuating assessment, the lump assessment imposed on the well will not be recovered during the period of exemption. The *chok* or *gat* wells, viz., those in which the part of the cylinder sunk below the water level is built of wood and the rest of masonry have been treated as masonry wells for purposes of exemption. Since the announcement of the assessment, the rules have been further relaxed and provision has been made for the grant of an exemption up to ten years in favour of wells which may be repaired, and also in favour of partially lined wells which are expensive. The rules to be acted upon in future are those sanctioned by Government in their Revenue Secretary's letter No. 70, dated 18th April 1903, Punjab Government Proceedings for April 1903, No. 19—22, which are printed as Appendix VII A. The total exemption granted to new wells for various periods is noted below.

Tahsil.							Rs.
Sinánwán	...	...	...	...	...	...	5,207
Muzaffargarh	...	...	...	...	...	...	6,816
Alipur	...	...	...	...	...	...	4,803
District	...	...	...	...	...	...	16,826

69. In accordance with the instructions contained in paragraph 552 of Donie's Settlement Manual, the tracts wholly or partially under fixed assessment have been classified into secure and insecure areas. The only part of the district classed as insecure is the Thal Circle of Sinánwán. The land revenue assessment of this circle will fluctuate, but the grazing assessment has been fixed for term of settlement. With a view to give relief in years of drought or cattle disease when cattle die out or

migrate to other parts and the collection of grazing dues becomes impracticable, it has been arranged to treat the grazing assessment as the maximum recoverable. The Collector will in bad years grant such remissions out of the demand as are necessary, subject to the control of the Commissioner, under the rules sanctioned by Punjab Government letter No. 186, dated 5th September 1903, and printed in Appendix VII. In tracts under fixed assessment of land revenue, whenever there is a contraction of more than 25 per cent. in the cropped area of a village against the cropped area which formed the basis of its assessment, it should be considered whether any suspension of revenue is needed in the village.

CHAPTER VI.—MISCELLANEOUS.

70. The revised assessments have been announced provisionally for a term of twenty years and should be sanctioned for that period.
 Term of settlement. The revised settlement has taken effect from Kharíf 1901 in tahsil Sinánwán and Kharíf 1902 in the other two tahsils and should expire in Rabi 1920 and Rabi 1921 respectively.

71. The canals in this district are all inundation canals and the main canals were all originally constructed by the people. Before Substitution of occupiers' rates for chher. annexation, the management of the canals was in the hands of the irrigators assisted by the local officials who saw that the labour necessary for the clearances and maintenance of the canals was promptly turned out. From annexation till 1880 improvements in the management of the canals were made from time to time, but eventually the necessity of professional management was recognized, and in 1880 the district was constituted a Public Works Department Division and an Executive Engineer was appointed to manage the canals in the district. A brief history of the management of these canals was given in the first four paragraphs of my letter No. 188, dated 4th June 1900, to the Settlement Commissioner, Punjab, printed as No. 8 of Punjab Government Proceedings for March 1902, No. 6—20. The irrigators paid no price for the water beyond furnishing labour to clear and maintain the canals according to a system called the chher system which was described as follows in paragraph 4 of the letter above alluded to.

"The chher system, as it now exists, may be briefly described as follows. The working expenses of the canals, with the exception of a contribution of nearly Rs. 17,000 made by Government on account of pay of Dároghas, Mirábs, &c., out of the Imperial Funds, are borne by the people. The clearances are effected by chher labour supplied by the people, and any work left unfinished is completed by paid labour out of the Zár-inágha Fund into which all fines inflicted upon absentee chher-guzárs (assessors of statute labour) are credited. Other improvements needed are also effected out of this fund, when there is money to spare. As regards the assessment of chher, an estimate of the probable requirements of each canal is made by striking an average for the past three years of the total number of *chherás* (labourers), who were actually present on work together with *chherás* remitted to *sarpanches* and any supplementary *chherás* called out. To this average is added the number of *chherás* called out for urgent works in summer. The estimate is discussed by the Divisional Canal Officer with the *sarpanches* representatives of irrigators on each canal) assembled in a committee, and is raised or lowered within a limit of 20 per cent. according to the probable requirements of the next working season. The total chher assessable for the years is thus arrived at. This is done in the month of September. An average rate per acre is then deduced by dividing the total number of *chherás* required for each canal by the average area irrigated by that canal during the past three years. This rate is called the chher-partá. The chher-partá for each canal is communicated to the Collector who has chher papers prepared by the patwáris. The area irrigated is assessed at the partá above mentioned, and so the number of *chherás* to be supplied by each irrigator is determined."

The advantages and disadvantages of the chher system were described in that correspondence and it was recognized that time had come when the system of statute labour should be abolished and an occupiers' rate substituted for it. On what considerations the rates should be fixed formed the subject of discussion, and it was eventually decided by His Honor the Lieutenant-Governor that for the present the rates may be so fixed "as to yield an income which shall not more than cover the cost of working the canals." The abolition of the chher system was sanctioned by the Punjab Government in their Revenue Secretary's letter No. 48, dated 4th March 1902.

The contention of the Canal Department was that the occupiers' rates should be framed irrespective of the working expenses, and should represent the price of water. The reasons which led Government to the above decision were thus stated in the above-mentioned letter :

"The enhancement of land revenue which is being taken is a full one, the abolition of ehher is a change which the majority of the people profess to dislike, and in the absence of keen competition of tenants for land there is a danger that the occupiers' rates, if high or full, might fall upon the owners to pay in addition to the land revenue."

Different estimates of the cost of working the canals were framed, and the final estimate of the Chief Engineer Irrigation Department amounted to Rs. 2,24,634 per annum. The following rates, which were estimated to yield an income of Rs. 2,14,653 on an average of years, were sanctioned by the Government of India in their Under Secretary, Public Works Department's letter No. 673, C. W. J., dated 6th June 1902.

Class.	CROPS.	RATE PER ACRE OF MATURED CROPS.	
		Flow.	Lift.
CHENAB CANALS.			
		Rs. a. p.	Rs. a. p.
I	Rice, garden, pepper	2 4 0	1 2 0
II	Cotton, sugar-cane	1 8 0	0 12 0
III	Other kharif crops	1 2 0	0 9 0
IV	Rabi crops	0 12 0	0 6 0
INDUS CANALS.			
		Rs. a. p.	Rs. a. p.
I	Rice, garden, pepper	1 8 0	0 12 0
II	Cotton, sugar-cane, indigo	1 0 0	0 8 0
III	Other kharif crops	0 12 0	0 6 0
IV	Rabi crops	0 8 0	0 4 0

These rates will be assessed every year on the area of matured crops. Certain lands receiving canal irrigation, which have hitherto been exempt from furnishing ehher or have furnished ehher at half rates are to be treated in accordance with rules sanctioned by the Punjab Government in their Revenue and Financial Secretary's letter No. 82, dated 21st September 1903, and given in Appendix VII G.

A double set of rates for the Chenáb and Indus Canals was justified owing to a very considerable difference in the fertilizing value of the silt carried by the water of the two rivers, the difference in the quality of the lands irrigated by the canals fed from the two rivers, and the profits of the cultivators and owners derived therefrom. The occupiers' rates have been introduced on the Garku, Magassan and Maggi Canals which irrigate the Siminwán Tahsil and part of Tahsil Muzaffargarh with effect from Kharif 1902, and in the rest of the district from Kharif 1903.

The estimate of income from occupiers' rates was a cautious one, but experience of the assessment of occupier's rate during the year 1902-03 in part of the district shows that the actual income will be much larger.

It will not be out of place to observe that although the rates now fixed are subject to quinquennial revision, yet in consideration of the fact that their introduction has caused a very great economic change in the district, and that the assessments which have been imposed at the Settlement include the profits from canal water which might form part of a full occupier's rate, I doubt if there will be sufficient reasons for the enhancement of these rates after five years, and any proposals which may be made in this respect after five years will have to be very carefully considered. The estimate of income from the occupiers' rates was based on the understanding that allowance for failed crops (kharāba) would in future years be made at an average rate of about 15 per cent. of the sown area, and it is trusted that the allowance will be made liberally in the crop inspections which will form the basis of the assessment of occupiers' rates.

72. Government enjoyed superior proprietary rights in lands situated in 8 villages with a total area of 3,574 acres including 1,975 acres of cultivation. The total income of Government from this source amounted, in the whole district, to Rs. 93 per annum. The income was very small and there was no advantage worth consideration in maintaining the right of Government to be considered superior proprietor of these small areas. Under the orders conveyed in Punjab Government letter No. 246, dated 27th September 1902, to the Senior Secretary to Financial Commissioner, Government has relinquished its right to recover these dues and to be called superior proprietor of these lands. In some of the villages the income was merely nominal. In others where the amount was somewhat larger, the fact of the payment hitherto made by landowners on this account was, under the orders of Government, borne in mind in assessing the villages to land revenue.

73. All the revenue realized from the occupiers' rates will go to the Canal Department as a direct credit. They are, however, also entitled to a share of the land revenue which may be said to consist very largely of the water-advantage revenue in the canal-irrigated tracts where cultivation depends mainly on canals. The Canal Department will, under the orders contained in Revenue Secretary to Punjab Government's letter No. 117, dated 4th December 1903, be given indirect credit for the following items :—

- (a) all canal-advantage revenue which may hereafter be assessed on extended canal irrigation in holdings not now assessed as nahri ;
- (b) a sum of Rs. 2,38,000 per annum out of the fixed land revenue (representing the whole of the revenue on nahri lands and half of that on the chāhi-nahri), and,
- (c) all fluctuating revenue assessed on canal-irrigated (nahri and chāhi-nahri) crops (by crop rates) which would, if calculated on the crops of 1901-02, have amounted to Rs. 1,23,913.

74. A record of rights having been prepared for every Government forest in the district, steps were taken to have them protected under section 28 of the Forest Act, 7 of 1878. The proposal was approved by the Settlement Commissioner and the Deputy Commissioner was asked in my letter No. 80, dated 9th November 1903, to submit the papers to Government for sanction after consulting the Extra Deputy Conservator of Forests in charge of the Mooltan Division. But the matter has been shelved for the present under orders of the Commissioner of Mooltan, contained in his letter No. 55 C., dated the 20th February 1904, to the Deputy Commissioner, Muzaffargarh.

75. Detailed proposals regarding the future management of Government forests have been submitted with my letter No. 383, dated 22nd June, to the Commissioner, Mooltan Division, including proposals for grant of cultivating leases, the assessment to be imposed including mālikāna and the terms on which the grazing rights in the forests should be leased from year to year.

76. Government owns cultivated and uncultivated lands in small plots in a large number of villages in the district in addition to the Government forests. The lands are held by tenants. The question of rights of these tenants has been under consideration since last settlement. The last order was that the Settlement Officer should determine the price at which each plot of land should be sold with reference to the new assessment imposed on the land. I took up the case after announcing the new jama. It involved enquiry in over 800 cases. I wrote my remarks on each case and completed the register of these Government lands some time ago. A separate report will shortly be submitted on the subject.

77. At the commencement of settlement operations there were 227 pat-wāris including assistants, in the district. In consideration of the increased work, due partly to increased cultivation and partly to the introduction of fluctuating assessments to a much larger extent

than at last settlement, and also with reference to the work of assessment of occupiers' rates which has, under the orders of the Financial Commissioner, to be conducted, for the present, by the same patwáris, the number of patwáris has been increased to 264, including 15 assistants, for the whole district. The grades and pay of the patwáris will be as follows:—

<i>Per mensem each.</i>							
Rs.							
62 Patwáris, 1st grade	...	...	...	...	...	...	15
* 125 „ 2nd „	...	...	...	...	...	...	12
62 „ 3rd „	...	...	...	...	...	...	10
15 Assistant Patwáris	...	...	...	...	...	...	8

The increase of establishment has been sanctioned by the Financial Commissioner in his Senior Secretary's letter No. 513, dated 24th March 1903. The question of appointment of Canal patwáris is being separately dealt with and the above addition to the establishment has been sanctioned on the understanding that the patwáris newly entertained will come under reduction if it is finally decided to give the work of assessment of occupiers' rates or the whole assessment work of canal-irrigated villages to the Canal patwáris. In that case the patwáris' circles will have to be completely revised.

In order to effectively supervise the work of fluctuating assessment and to cope with the enormous task of giving remissions for failed crops, the number of field kánungos has been increased from 12 to 22 so that there will be a kánungo to every 10 or 12 patwáris (Punjab Government letter No. 196, dated 16th September 1903). Proceeding on the assumption that in tracts under fluctuating assessment, there should be a Naib Tahsildar to every 50 patwáris, a second Naib Tahsildar has been sanctioned permanently for the Alipur Tahsil and it has been arranged that an extra Naib Tahsildar should be deputed to the Muzaffargarh and Sináuwán Tahsils during the months of October and March for supervising crop inspection work. (Punjab Government letter No. 929, dated 10th September 1903.)

78. Zaildárs were appointed in this district at the commencement of last settlement. They were remunerated by a deduction of one per cent. from the revenue of their zails and by special ináms. There were 51 zails at last settlement with 59 zaildárs, some of the zails being shared by two zaildárs. The number of zails has now been reduced to 45 and they have been reorganized so that every zail will be in charge of one zaildár and every zail will fall wholly within one thána. Great inconvenience used to be experienced in consequence of a zail being situated within the boundaries of two or three thánas. With a view to secure the latter end the limits of thánas had to be slightly altered in some cases and the alterations were duly sanctioned by Government (*vide* Notification No. 19, dated 26th January 1903). It has been arranged to remunerate the zaildárs by fixed pay, in three grades, thus:—

<i>Per annum.</i>							
Rs.							
1st grade	...	...	...	...	...	...	200
2nd grade	...	...	...	...	...	...	150
3rd grade	...	...	...	...	...	...	100

Some of the zaildárs, whose emoluments had been much larger than the pay now fixed for them have had to be remunerated by special compensation ináms which will be resumable at their death or vacating office, except in special cases when they may be continued to their successors under the orders of Government. The pay of the zaildárs will be somewhat less than one per cent. of the estimated future revenue of the district, but including the compensation ináms the total emoluments of zaildárs will be a little larger. There are two ináms

* Thirteen of these were getting Rs. 14 per mensem and will continue to draw the same pay till promoted.

held on special terms under the orders of Government. The following table gives the figures:—

Tahsil.	NUMBER OF ZAILS.			Total Pay.	Compensation Ináms.	Special Ináms.	Total present emolument of Zaildárs
	1st class.	2nd class.	3rd class.				
Sinánwán	3	6	...	Rs. 1,500	Rs. 250	Rs. 50	Rs. 1,800
Muzaffargarh	9	2	7	2,800	775	150	3,725
Alipur	2	5	11	2,250	400	...	2,650
District	14	13	18	6,550	1,425	200	8,175

The reorganization of zails and the scheme for remunerating the zaildárs were sanctioned by the Punjab Government in their Revenue and Financial Secretary's letter No. 1, dated the 13th January 1903. The appointment, promotions, &c., of zaildárs will be regulated by general rules contained in No. 173-A of the rules under the Punjab Land Revenue Act.

79. The ináms granted to zaildárs at last settlement amounted to 59 per cent. of the total revenue of the district. Zaildárs having now been remunerated by fixed pay and compensation ináms, 23 zamíndári ináms of the aggregate value of Rs. 1,325 per annum have been sanctioned by the Punjab Government in their Revenue and Financial Secretary's letter No. 1, dated 13th January 1903, referred to in the preceding paragraph for grant to other deserving lambardárs and influential landowners. The ináms have been graded as follows:—

	Per annum.
	Rs.
1st grade	75
2nd grade	50
3rd grade	25

They have been distributed by Tahsils thus:—

Tahsil.	NUMBER OF INÁMS.			Emoluments.
	1st grade.	2nd grade.	3rd grade.	
Sinánwán	2	6	...	Rs. 450
Muzaffargarh ... ..	...	8	2	450
Alipur ... ..	...	8	1	425
District	2	22	3	1,325

NOTE.—Two 3rd grade ináms were transferred from Sinánwán to Muzaffargarh by Punjab Government letter No. 172, dated 13th August 1903.

The ináms amount to less than one-fourth per cent. of the total revenue of the district. The amount has been kept low in consideration of the compensation ináms which have been granted to the zaildárs. Rules 171 and 173 under the Land Revenue Act relating to inámdárs have been extended to this district by Punjab Government Notification No. 2, dated 13th January 1903. The ináms will be confined to the tahsils for which they have been sanctioned. Each Inámdár and Zaildár has been provided with a book of convenient size containing a list of villages included in the zail, a map thereof, a printed paper showing their duties and blank papers for the remarks of the Collector or other officers above the rank of Tahsildar when they go out on tour.

80. A few alterations in the number of lambardárs which were found necessary during settlement operations have been made and reported upon. No radical changes in the lambardári arrangements have been made except that instead of the sarpanches who were

responsible for turning out statute labour and were remunerated for the work by remission of labour in their favour, the lambardárs have now been made responsible for the recovery of the occupiers' rates, and will get from the treasury a fee of 3 per cent. on the collections. A scheme for the gradual reduction of lambardárs has been prepared for each tahsil, but with reference to the remarks contained in paragraph 63 of the final Settlement Report of Mooltan regarding the views of the Financial Commissioner on the subject, it was considered unnecessary to submit the scheme for approval. It will be available for the Deputy Commissioner's reference when the time comes for taking up each case and he can go up for sanction if he considers the course advisable with regard to the circumstances then existing.

81. The settlement was commenced on 1st October 1897 and was closed at the end of June 1903. It has thus lasted five years and nine months against a period of four years estimated in the forecast report. The late Sardār Bahādūr Arjan Singh was appointed to the settlement in October 1897, but he had not more than started the measurements when the charge fell vacant owing to his unfortunate and untimely death. I took over charge of the settlement in August 1898 and found that the late Sardār Bahādūr had kept no note of the work he had been doing in connection with inspection of villages or the preparation of the preliminary report on assessment circles and prices. I had therefore to do the whole work over again, and a whole year was thus lost to me. The operations had also to be prolonged to some extent owing to the time which it took to get orders on one of the assessment reports and then the detailed distribution of revenue took me longer than the time usually spent in announcing assessments. The demarcation of a permanent boundary with Bahāwalpur also took a considerable time. Notwithstanding the prolongation of settlement operations, the total cost has amounted to only Rs. 3,05,441 against an estimate of Rs. 2,62,928 made by the Financial Commissioner in paragraph 10 of his review of the Forecast report (Mr. Hallifax's letter No. 13 C., dated 25th May 1897) for a term of four years. This comparatively small difference is the result of savings effected from time to time by reduction of establishment proportionately to the amount of work in hand. The total cost will be repaid in less than $2\frac{1}{2}$ years and after that the increase of more than Rs. 1,25,000 per annum will bring in a return of nearly 41 per cent. per annum on the outlay. The details of the cost of settlement are given in Appendix VI. Against the cost of settlement might be set off Rs. 756 to be recovered from jāgirdārs on account of their share of the cost of settlement and the realizations from mutation fees in excess of the normal income amounting to Rs. 13,323. Taking the average of two years preceding the settlement operations as the normal income from mutation fees the gain from that source may be calculated as follows:—

82. With one exception, the assignments in this district are all petty mafis which have been exempted from payment of a share of the cost of settlement. The exception is a jágír held by the Nawábs of Dera Ismail Khan in the village of Lálpur. Under the sanction conveyed in Senior Secretary to Financial Commissioner's letter No. 3838, dated 22nd June 1903, Rs. 756-0-3 will be recovered from the assignees as their share of the cost of settlement.

83. In accordance with paragraph 4 of revised Revenue Circular 62, a village directory of the Muzaffargarh District was prepared and submitted to the Director, Land Records and Agriculture, with my letter No. 336, dated 24 June 1903.

84. At the close of settlement operations a detailed dastúr-ul-amal was drawn up for the guidance of the partwáris and Revenue Officers containing instructions regarding crop inspection, assessment and the preparation of records and statements in accordance with the orders passed during the settlement. The dastur-ul-amal has now been brought up to date with reference to orders of Government received since the close of the settlement and revised in the light of experience of working the rules during the past year. A draft in English has been submitted for approval to the Settlement Commissioner, Punjab, with my letter No. 268, dated 6th May 1904, and a complete vernacular translation has been made over to the District Kánúngo of Muzaffargarh and will be printed when the draft has been approved by the Financial Commissioner.

85. Altogether 55 persons were given settlement training during the course of settlement operations in the district. Of these there were 6 Assistant Commissioners, 1 Extra Assistant Commissioner candidate, 1 probationer Extra Assistant Commissioner, 5 Naib Tahsildar candidates and 42 Kánúngo candidates.

86. At the time of the late Sardár Bahádar Arjan Singh's appointment to the settlement it was decided that he would require no Extra Assistant Settlement Officer. Sheikh Muhammad Munír, Extra Assistant Commissioner, an officer of considerable settlement experience was, however, appointed to the district as Revenue Assistant to help the Settlement Officer in settlement work. On my appointment to the settlement I urged the necessity of his services being placed completely at my disposal and this was done with effect from April 1899. Since then he worked as Extra Assistant Settlement Officer till the close of settlement operations and is now acting as Revenue Assistant in the district. Sheikh Muhammad Munír has spent the whole of his life in revenue work and, having started in the lower grades of the Settlement Department, rose to the post of Sadar Kánúngo at Mooltan, and was then Tahsildar of Batála during the Gurdáspur Settlement. He had thus a complete and thorough knowledge of measurement and record work. In his early days of service he had worked in the Dera Gházi Khan Settlement and, having also been at Mooltan, was not quite foreign to this part of the country. Although it was not possible to utilize his services fully in the beginning of the settlement in the organization of the measurement work, yet his supervision of the measurements and the revision of records left nothing to be desired, and in administrative and other matters I received great help from him. I found him to be perfectly honest and straightforward and very impartial, and I cannot speak too highly of the untiring zeal with which he worked throughout the settlement. He rendered invaluable help in settling boundary disputes, and it was his persistent hard work which necessitated his spending weeks and months out in the jungle on the river banks, his confidence in the measurements which he personally superintended and his thorough insight into the details of settlement papers which supplied me with materials to deal with the difficult questions of boundary settlement with Dera Gházi Khan and Baháwalpur and enabled me to settle the cases amicably with the officers on the other side. During the distribution of assessments he worked like a horse announcing the distribution over holdings and keeping pace with my announcement of the well jamas. Although the fact of not knowing English handicapped him in some matters, yet he made up

for this deficiency by his experience and hard work, and I do not think I could have wished for a better assistant. I am greatly indebted to him for his valuable assistance and earnestly hope that his services in this settlement will be duly rewarded in course of time.

My acknowledgments are due to the whole Settlement Establishment for the hard work which almost every member had to do in the discharge of his duties, and I can confidently say that with but a few exceptions no one in the supervising staff spared any pains in seeing that the work turned out was correct. The Tahsildars were given a light charge but did their best. Munshi Maharāj Parshād, Tahsildar of Sinánwán, deserves special notice for being in charge of the settlement work in the tahsil ever since October 1900, when measurements had been finished and the Settlement Tahsildar was transferred to another Settlement. He supervised the work in the best way he could and gave satisfaction. The other Tahsildars Malik Takht Rám, who was at Sinánwán for some time, Háfiz Ghulám Rasúl Khan, who officiated as Tahsildar at Muzaffargarh throughout the settlement operations, Diwán Kanhaya Lál, Sayyad Ahmad Shah (now dead), Lála Gela Rám and Bhái Dalíp Singh of Alipur, did their work well. Of the Settlement Tahsildars, Munshi Hussain was at Sinánwán for three years and worked very hard and conscientiously. He was the first Settlement Tahsildar to finish field measurements and gave me much help in my inspection of villages. In fact he overworked himself in his zeal for hard work which very nearly shattered his constitution. He was transferred to the Fázilka Settlement. Lála Rang Rám, Settlement Tahsildar and now Tahsildar of Muzaffargarh, is a steady, reliable and extremely hardworking officer whose work can always be depended upon. He has been accepted as a candidate for the post of Extra Assistant Commissioner. Lála Sada Rang, Settlement Tahsildar of Alipur, is another useful officer, very intelligent and hardworking. He is very well up in the details of Revenue work and knows how to get work out of his subordinates. He had to do much hard work in connection with the Boundary Settlement with Baháwalpur and Dera Gházi Khan. He had been placed in charge of the tahsil as Tahsildar in addition to his own duties, when I announced the revised assessments of the Alipur Tahsil, and had to work extra hard to carry on the twofold duties. In accordance with the wishes of the Settlement Commissioner, Lála Rang Rám and Lála Sada Rang have been kept in their respective tahsils as Tahsildars. This I consider to be a matter of congratulation for the district and the people as their intimate knowledge of the tahsils, coupled with their ability, should prove of inestimable value.

Of the Settlement Naib Tahsildars, Munshi Fateh Singh proved in the early days of the settlement his capability in field work, and capacity for doing hard and difficult pieces of work, and was sent out to the Jhang Settlement as Settlement Tahsildar. Chaudhari Ali Bakhsh was a hardworking, tactful and experienced old officer. He was transferred to Leiah as Settlement Tahsildar on promotion which he richly deserved. Munshi Jiwan Singh is a capable officer, intelligent and up to any amount of hard work. He assisted me in the distribution of assessments throughout the district and had to work extremely hard. He has also been sent out as a Tahsildar to the Jhelum Colony. Munshi Gopi Chand was an experienced officer. He did plenty of good work in Sinánwán and Alipur. He was also sent out as an Officiating Settlement Tahsildar. Munshi Amír Chand and Munshi Mana Rám are hardworking settlement Naib Tahsildars. They received grade promotion some time before leaving the Settlement. Of the Naib Tahsildars may be noticed Lála Dharam Jas of Sinánwán who was in the tahsil throughout settlement operations and gave complete satisfaction in every way. Akhund Abdul Rahím Khan was in the Alipur Tahsil practically throughout the term of settlement and did much hard work. In the Muzaffargarh Tahsil Munshi Ahmad Dín, who was at Rangpur for a short time, and Lála Fateh Chand, who succeeded him, worked with much zeal and energy, and Lála Seva Rám, who is now at Muzaffargarh, has done well in the discharge of his duties. Lála Rádha Kishan, now at Rangpur, has worked very hard and made himself very useful in work connected with the Settlement Department. Lála Dharu Lál did good work at Muzaffargarh and Alipur. My Head Clerk, Bábu Gonda Rám, worked very well in the office and was sent out in the field for a while to qualify for promotion. He is very honest and hardworking. Bábu Gauri Shankar,

my Názir, acted as my Head Clerk for a considerable time. He is an extremely hardworking and useful official. He has been accepted as a Settlement Naib Tahsildar candidate, but it is a pity that he has not done any field work and cannot get a sub. *pro tem.* appointment as a Settlement Naib Tahsildar. He has gone to the Gurgáon District to work as Field Kánúngo. My reader, Sheikh Muhammad Umar, is a quiet unassuming man, who had spent his whole life in field work, but nevertheless did very well in the office. He is now officiating as a Settlement Tahsildar in the Miánwáli Settlement. The District Kánúngo, Maulvi Sharif Muhammad, has done a great deal of useful work during the settlement. For some time he acted as a Field Deputy Superintendent, but was then recalled to do office work. I associated him in all the assessment work and he knows all about its details. He is intelligent and hardworking, and always willing to do what he can. His name has been accepted as a Tahsildar candidate, and I trust he will soon get promotion.

87. The greater part of this report was written before the close of settlement operations, and it was completed last summer at Delhi, where I had been sent on special duty. As, however, several questions concerning the details of assessment in future were still pending before Government, I was asked by the then Settlement Commissioner to wait till October 1903, and incorporate the orders of Government in the report. In September 1903 I was directed by Mr. MacLagan, then Officiating as Settlement Commissioner, to send up the report without waiting any longer for the remaining orders and to note in each case that orders were awaited. He also gave instructions regarding the form of the dastúr-ul-amal, which involved a recasting of nearly the whole of it. I was busy in my enquiry at the time, and was soon transferred to Miánwáli, where again I found little time for recasting the dastúr-ul-amal. Meanwhile some more orders of Government were received in January last, and the Revenue Assistant and the District Kánúngo of Muzaffargarh insisted on my giving complete instructions in the dastúr-ul-amal for the working of the assessment. I was glad of getting orders of Government on most questions and of the opportunity of discussing the provisions of the dastúr-ul-amal with the local Revenue Officers in the light of the experience gained in working them. I did this during my visits to Muzaffargarh for taking agreements from the land-owners in the Thal in connection with the Sind Sagar Colonization Act and spent much time over it. The dastúr-ul-amal was completed and submitted last month, and it has taken about a month to copy and compare this report. Orders of Government have now been received on all questions except the remission of revenue on wells going out of use referred to in Appendix VII C.

MIANWALI: }
Dated 22nd June 1904.

HARI KISHAN KAUL,

Settlement Officer.



सत्यमेव जयते

GLOSSARY OF VERNACULAR TERMS.

Vernacular.	English meaning.
ABIANA	Lump assessment on wells and jhallárs.
BAJRA	Spiked millet.
BIGHA	Half an acre.
BRAHMAN	Hindu priest.
CHHER	Statute Labour.
CHHEROUZAR	A person furnishing statute labour.
CHHER-PARTA	Rate according to which statute labour is assessed.
DASTUR-UL-AMAL	Book containing instructions for the guidance of Revenue Officers and Patwáris.
DAROGHA	A Canal official.
DHARMSALA	A place of worship and rest for Hindús.
FARD-BACHH-KHATEWAR	Distribution list by Holdings.
INAM	A cash assignment of land revenue.
JAMA	Revenue.
JUALLAR	Persian-wheel for lifting water from creeks, &c
JOWAR	Great millet.
KHANGAH	Muhammadan shrine.
KHARABA	Failure of crops.
KHARIF	Autumn harvest.
KHASKA GIRDAWARI	Harvest inspection book.
KHEWATS	Proprietary holdings.
LAMBARDAR	Village headman.
MAFI	Assignment.
MALBA	Cess for village expenses.
MALIKANA	Rent paid on Government lands in addition to land revenue.
MASSAR	Lentil.
MIRAB	Canal official looking after distribution of water.
METHRA	Fenugreek.
MOTH	A pulse (<i>Phaseolus acontifolius</i>).
MULLAN	Muhammadan priest.
MUNEIFFS	Representatives for preparing lists of cattle.
NAKSHA CHAHAT	Statement of rights in wells.
NAZRANA	A due paid by lessees.
PATH	A measure of grain weighing from 25 to 30 maunds.

Vernacular.	English meaning.
PATTI	A strip of land not attached to a well.
RABI	Spring harvest.
RAKH	Forest.
SAMUKKA	A cereal (<i>Oplisminum frumentaceum</i>).
TARJA	Rendezvous of zamindárs.
TIL	Sesamum.
TIRNI	Grazing dues.
USSUN	Brassica eruca.
ZAR-I-NAGHA	Fine levied on absentee chheras (labourers).



सत्यमेव जयते



APPENDICES.

1914-15

Appendix I—Statement showing Population, Area and Revenue by Tahsils.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Name of Tahsil.	POPULATION.					AREA IN ACRES (1901-'02).										AVERAGE AREA OF MATURED CROPS ON WHICH ASSESSMENTS WERE BASED, IN ACRES.						REVENUE.			
	Census of					Cultivated with detail of soils.																			
	1868.	1881.	1891.	1901.	Total.	Chahi.	Chahi-nahri.	Nahri.	Abi.	Bahi-sailab.	Sailab.	Total.	Chahi.	Chahi-nahri.	Nahri.	Abi.	Chahi-sailab.	Sailab.	Total.	First Summary Settlement.	Second Summary Settlement.	Third Summary Settlement.	First Regular Settlement.	Second Regular Settlement.	
Binnawan	75,172	79,841	93,886	103,091	645,513	12,876	43,350	34,842	6,327	11,067	26,029	134,493	13,079	34,868	36,651	3,429	9,812	22,963	118,702	1,44,811	1,29,760	1,08,660	1,36,227	1,64,422	
Muzaffargarh	124,283	144,460	162,961	174,970	584,134	4,681	70,556	57,074	9,637	12,023	43,233	167,153	4,459	59,744	82,009	6,302	12,211	98,566	163,271	2,57,589	2,52,790	2,20,592	2,66,702	3,37,506	
Alipur	93,207	110,166	121,540	130,595	590,240	186	33,605	66,683	6,668	10,142	60,779	178,099	1,676	18,212	68,970	4,458	7,521	45,628	146,916	1,82,737	1,70,432	1,41,042	1,67,863	2,30,318	
Total	292,612	334,467	378,387	405,656	1,819,887	17,695	147,513	158,605	22,632	33,139	130,041	509,653	20,034	108,924	167,630	14,189	29,894	107,457	448,886	5,85,140	5,53,002	4,70,294	5,09,812	7,32,333	

Appendix II.—Statement showing the estimated half net assets rates per acre of matured crops for each class of soil in each assessment circle.

Tahsil.	Assessment Circle.	Chāhi.	Chāhi Nabri.	Nabri.	Abi.	Chāhi Sailāb.	Sailāb.	Average.
		Rs. a. p.	Rs. s. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
BINANWAN.	Thal	0 9 4	1 0 0	0 12 8	...	...	...	0 9 4
	Thal Nabri	0 15 10	1 6 10	1 5 5	...	...	...	1 3 8
	Pakka	1 5 4	1 11 11	1 6 4	1 6 4	1 5 10	0 12 9	1 8 2
	Bet ... ..	...	1 13 5	1 4 8	1 11 6	1 10 1	1 2 3	1 5 5
MUZAFFARGARH.	Chenāb	2 9 0	2 13 9	2 2 9	2 12 9	2 9 9	1 15 3	2 3 6
	Sindh	1 7 0	1 14 6	1 5 9	1 13 3	1 11 0	1 2 9	1 8 3
	Pakka	1 14 6	2 6 3	1 13 9	1 15 0	1 12 9	1 4 9	2 1 6
	Thal	1 4 0	1 13 0	1 7 6	...	...	0 12 0	1 10 0
ALIPUR.	Chenāb	1 13 0	2 4 8	1 10 6	1 15 9	1 14 6	1 6 9	1 9 6
	Sindh	1 3 9	1 11 9	1 7 0	1 11 6	1 8 6	1 4 3	1 5 6
	Pakka	1 10 3	1 14 6	1 10 9	1 9 9	1 8 9	1 2 6	1 11 6
	Chāhi Sailāb	1 6 0	1 9 3	1 5 0	1 8 0	1 6 3	1 1 0	1 4 9

NOTE.—1. Figures taken from Assessment Reports.

2. Fractions omitted in Binanwan Tahsil.

Appendix III.—Statement showing assessment rates sanctioned per acre of matured crops.

Tahsil.	Assessment Circle.	FIXED.						FLUCTUATING.		
		Chāhi.	Chāhi Nabri.	Nabri.	Abi.	Chāhi Sailāb.	Sailāb.	Class I.	Class II.	Class III.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
BINANWAN.	Thal	0 11 0	1 0 0	1 0 0	...	...	...	...	...	...
	Thal Nabri	0 13 0	1 6 0	1 3 0	...	...	...	...	...	...
	Pakka	1 0 0	1 8 0	1 3 0	1 4 0	1 5 0	0 12 0	...	...	...
	Bet ... ..	...	...	...	...	...	...	1 4 0	0 12 0	0 6 0
MUZAFFARGARH.	Chenāb	1 8 0	2 0 0	1 10 0	...	...	...	Maximum 2 0 0 Minimum 1 4 0 Average about ...	1 0 0 0 12 0 1 6 0	Nautor charged at half rates for first year.
	Sindh	(The same as for fluctuating portion).						1 4 0	0 12 0	
	Pakka	1 8 0	2 2 0	1 9 0	1 11 0	1 11 0	1 2 0	2 0 0	0 14 0	
	Thal	1 0 0	1 9 0	1 5 0	...	...	1 0 0	...	...
ALIPUR.	Chenāb	1 6 0	1 12 0	1 6 0	...	...	...	Maximum 2 0 0 Minimum 1 4 0 Average about ...	1 0 0 0 12 0 1 2 0	Nautor charged at half rates for first year.
	Sindh	(The same as for fluctuating portion).						1 4 0	0 12 0	
	Pakka	1 8 0	1 12 0	1 6 0	1 8 0	1 8 0	1 0 0	1 12 0	0 14 0	
	Chāhi Sailāb ... ..	...	...	...	...	...	...	Maximum 1 6 0 Minimum 1 2 0	1 0 0 0 10 0	

* Revenue fluctuating by holdings.

Appendix IV—Statement showing Comparison of new Land Revenue with half net assets, previous Land Revenue and Assessment by sanctioned Revenue rates.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Assessment Circle.	Half net assets.	Assessment of last settlement.	Assessment of the year preceding the new assessment.	Assessment by sanctioned rates.	Fixed.	Fluctuating.	Revenue now imposed.	Percentage of new assessment on half net assets.	That of last settlement.	That of year preceding the new assessment.	That by sanctioned rates.	Fixed.	Fluctuating.	INCIDENCE PER ACRE.	
TARAIL.																
SINAWAN.																
	Thal	2,927	5,002	5,612	3,461	...	3,554	3,554	121	-37	-37	+3	...	5,015	...	0 11 0
	Thal Nehri	8,970	6,414	6,524	6,017	8,417	...	8,417	94	+55	+29	+5	1 2 6	...	1 5 4	...
	Pakka	1,01,896	78,118	79,399	87,627	90,056	...	90,056	88	+15	+13	+3	...	...	...	...
	Bet	52,214	33,099	38,598	46,035	...	46,183	46,183	68	+40	+20	..	...	40,560	...	1 2 3
	Total	1,06,007	1,22,232	1,30,133	1,45,140	98,473	49,737	1,48,210	89	+21	+14	+2	74,753	45,575	1 5 1	1 1 5
MUZAFFARGHARR.																
	Chenáb	1,16,153	81,051	62,281	89,740	11,413	77,435	69,248	70	+46	+43	..	6,787	51,230	1 11 10	1 8 2
	Sindh	24,527	17,642	20,496	20,937	753	20,471	21,229	87	+20	+4	+1	487	16,157	1 8 11	1 4 3
	Pakka	1,93,194	1,40,608	1,42,394	1,67,196	1,00,507	5,641	1,66,148	86	+18	+17	+1	88,707	3,757	1 12 11	1 8 0
	Thal	34,558	27,231	27,639	30,414	30,260	283	30,523	59	+12	+10	..	21,126	370	1 6 11	0 11 4
	Total	3,70,732	2,46,532	2,52,810	3,08,327	2,08,338	1,03,810	3,07,148	83	+25	+21	..	1,17,107	71,514	1 11 9	1 7 4
ALIPUR.																
	Chenáb	56,500	30,958	44,498	52,178	4,150	48,758	52,908	94	+71	+19	+1	2,557	88,544	1 10 0	1 4 3
	Sindh	33,043	21,196	24,768	27,370	3,167	25,876	29,043	88	+41	+17	+6	1,835	22,185	1 11 7	1 2 8
	Pakka	1,04,985	69,125	72,015	90,483	2,458	88,956	91,414	87	+32	+27	+1	863	56,920	*1 13 11	1 9 5
	Chabi Sallab	33,245	27,991	32,660	36,005	...	36,768	36,768	+111	+21	+13	+2	...	32,727	...	1 2 0
	Total	2,27,773	1,40,270	1,73,941	2,06,037	9,775	200,358	2,10,133	92	+41	+21	+2	5,258	1,50,076	*1 11 2	1 5 4
	GRAND TOTAL	7,64,512	5,18,035	5,56,884	6,59,504	3,11,586	3,53,905	6,65,491	87	+29	+20	+2	1,97,118	2,67,165	*1 9 3	1 5 2

NOTE.—Figures in columns 3 and 4, have been taken from the Assessment Reports, while those in other columns agree with the detailed Village Assessment Statement.
 * The area on which new assessment was calculated was unusually large, hence the large difference.
 † Excluding the garden Jams in tracts under fluctuating Assessment.

Appendix VI.—Statement showing expenditure incurred on the Settlement from October 1897 to 30th June 1903.

Detail.	Total expenditure.
	Rs. a. p.
(1). Salary and Settlement Allowance of Gazetted Officers	75,423 11 7
A.—OFFICE ESTABLISHMENT.	
(2). Office Kánungos	13,912 5 8
(3). Menial Establishment	17,756 9 11
Total	31,668 15 7
B.—FIELD ESTABLISHMENT.	
(4). Settlement Tahsildars	22,593 2 4
(5). Ditto Naib ditto	30,194 3 5
(6). Field Kánungos	35,698 12 10
(7). Field Allowance of Field Kánungos	7,761 10 6
Total Field Establishment	96,247 13 1
(8). Temporary Establishment	56,673 5 10
Total Pay of Establishment	1,84,590 2 6
(9). Travelling Allowance of Officers	12,393 5 0
(10). Do. do. of Establishment	2,100 4 9
(11). Contingent expenditure, except stationery and lithography	26,545 1 5
Stationery	3,404 2 5
Lithography	984 5 7
Total Contingent Expenditure	30,933 9 5
GRAND TOTAL	3,05,441 1 3

APPENDIX VII

- (A).—Rules relating to certificates of exemption of newly constructed or repaired wells.
- (B).—Rules for remission of water advantage land revenue.
- (C).—Rules for remission of revenue on wells going out of use.
- (D).—Rules for collection of land revenue assessed on wells in the area under the fluctuating system of assessment by holdings in the Muzaffargarh District.
- (E).—Rules for ascertaining and assessing the area irrigated from canals in holdings not assessed at Settlement as canal irrigated.
- (F).—Rules for the assessment of gardens and fruit trees.
- (G).—Rules regarding exemption or favourable treatment of certain lands in the assessment of occupiers' rate.
- (H).—Secure and insecure areas.



**A.—RULES RELATING TO CERTIFICATES OF EXEMPTION OF NEWLY
CONSTRUCTED OR REPAIRED WELLS.**

1. When a masonry well is constructed for the purpose of irrigation at private expense, or with the aid of a loan from Government, the land which benefits from the well shall be entitled to an exemption from that part of the assessment which is due to the existence of the well, for a period of twenty years from the date on which the well was first brought into work:

Para. 502, Douie's Settlement Manual.

Provided that when the well is constructed to irrigate land already assessed at irrigated rates, the period may be shortened if, in the opinion of the officer granting the exemption, the amount of expense incurred is not sufficient to require exemption for the full period of twenty years.

When an existing well is repaired for the purpose of irrigation, a similar exemption may be given for a period not exceeding ten years to be fixed by the officer granting the exemption, with reference to the amount of the expenditure incurred in repairing the well.

The period of exemption, if less than the maximum, should be so fixed as to allow the owner a reasonable return on his expenditure before that part of the assessment which is due to the existence of the well becomes realisable. In special cases the Financial Commissioner may sanction the grant of exemption from assessment for a longer period than is allowed by the above rules. No exemption shall be granted for unlined wells which cost little and are not permanent, but wells which, though only partially lined with stone or brick, are expensive to make and last for some years may be granted an exemption provided that the total amount granted does not exceed the cost of the work.

2. The extent of the exemption to be granted shall be that during the period of exemption the land irrigated by the well shall be assessed at the amount at which it would have been assessed had there been no well at all, and no fixed lump assessment shall be imposed on the well itself during that period.

2 (a). In the portions of the Muzaffargarh District which are under fluctuating assessment on the area cropped, any pure *chahi* cultivation effected by the new well will be liable to fluctuating revenue, but no fixed lump assessment will be imposed upon the well.

नवगोत्र नयन

3. Similar exemption should be granted for other irrigation works subject to the following maximum periods:—

For expensive canals, permanent dams or reservoirs—

If new—twenty years;

If repaired—ten years.

For canal distributaries or cuts from river and lakes—five years.

For masonry *jhallars*—five years, provided that the total amount remitted by the exemption shall not exceed the cost of the work.

3 (a). In the tracts under fluctuating assessment in the Muzaffargarh District a new *kachha* well or *jhallar* is assessed for one year to half the lump revenue leviable and after that to the whole sum.

When a well or other irrigation work is constructed or repaired during the currency of a settlement in such circumstances as to entitle the owner to an exemption from assessment at irrigated rates, the Collector should make a special enquiry and grant a certificate of exemption in accordance with rules given in paragraph 502. If the exemption is to take effect immediately, for example when the work is a new well made to irrigate land formerly watered from a well which it has become impossible to repair, or is an existing well repaired, the certificate should state as nearly as may be all the particulars mentioned in paragraph 504, and in addition should show distinctly the amount of existing land revenue to be remitted, fixed wherever possible in even rupees. But if the exemption is not to take effect till the next revision of assessment, as, for instance, where a new well is constructed to irrigate land under fixed assessment not assessed as well irrigated, there is no need to take action unless the owner of the well applies for a certificate. In such a case no entry should be made as to the area subject to the concession or the amount of the exemption. These particulars will be filled in by the Settlement Officer at the next re-assessment.

Para. 505, Douie's Settlement Manual.

B.—RULES FOR REMISSION OF WATER ADVANTAGE LAND REVENUE.

Punjab Government letter No. 149, dated 23rd July 1903.

Senior Secretary to Financial Commissioner's letter No. 427, dated 8th June 1903.

Settlement Commissioner's letter No. 60 C., dated 4th April 1903.

In villages under fixed assessment, when a holding assessed at settlement as wholly or partially canal irrigated gets no canal water owing to a more or less permanent failure of the canal or falls out of cultivation owing to a persistent calamity (such as water-logging), a remission of the fixed land revenue will be granted under the following rules:—

1. If the holding remains entirely uncultivated, the whole assessment will be remitted.
2. If the holding continues to be cultivated with the aid of well only then,
 - (a) if the well is under a certificate of exemption, the whole assessment will be remitted;
 - (b) if not, the Deputy Commissioner will reduce the fixed assessment of the holding to the amount given by applying the sanctioned *chāhī* rate for the circle to the probable average area of the *chāhī* crops in the holding.
3. Remission shall not be granted under these rules for a partial or merely temporary failure of canal supply, or on holdings which were assessed at settlement to a nominal revenue of Re. 1 or Rs. 2.
4. When a holding, the revenue of which has been wholly or partially remitted under rule 1 or 2, is again irrigated by a canal the remitted revenue or such portion of it as the Deputy Commissioner sees fit may be reimposed.
5. The Patwāri shall on completing the *kharif girdāwari* submit for orders, a list of all holdings which were assessed at settlement as canal irrigated and which have received no canal water during the year, and a list of all holdings which have received a remission under rule 1 or 2, and which have been irrigated from canal during the year. These lists will be scrutinized by the Tahsildar and submitted with his proposals to the Deputy Commissioner, for orders.

C.—RULES FOR REMISSION OF REVENUE ON WELLS GOING OUT OF USE.

Settlement Commissioner's letter No. 2918, dated 24th August 1903.

(Subject to sanction of Government).

Para. 1. (Does not apply to Muzaffargarh.)

2. In tracts where the assessment is wholly fixed, when a well falls out of use, the Deputy Commissioner shall consider whether that part of the assessment which represents the profits of irrigation from the well should not be remitted. If the land attached to the well remains wholly uncultivated he shall remit the whole assessment on the well holding with effect from the first rabi harvest in which the well was out of use. If the land attached to the well continues to be cultivated with the aid of another well or of canal, river floods or local rainfall, he shall give such a remission not exceeding the sum assessed on the profits of the irrigation from the well as he considers fit with reference to all the circumstances of the holding. When a well of which the assessment has been wholly or partly remitted under this rule is again brought into use the assessment remitted or such portion of it as the Deputy Commissioner shall see fit shall (unless it is remitted under protective lease) be reimposed with effect from the first rabi harvest in which the well is in use.

D.—RULES FOR COLLECTION OF LAND REVENUE ASSESSED ON WELLS IN THE AREA UNDER FLUCTUATING SYSTEM OF ASSESSMENT BY HOLDINGS IN THE MUZAFFARGARH DISTRICT.

Punjab Government letters No. 185, dated 5th September 1903, and No. 228, dated 26th November 1903.

1. No assessment will be levied on a well which has not been worked during the year or on which the total area under crop in the year is less than one acre.
2. When a well is held in defined shares and the land attached to the well is divided according to those shares, no assessment will be levied on any share in the well-holding which has not been cultivated during the year, or on which the total area under crop in the year is less than half an acre.
3. When a well and the land attached to it are held jointly, the Settlement Officer will fix the area to be considered as representing the area under cultivation when

the well is fully at work, and whenever an area equal to $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ or $\frac{3}{4}$ of that area remains uncultivated, a corresponding fraction of the assessment fixed for the well at settlement shall be remitted.

NOTE.—A list has been prepared for each village showing the name of wells held jointly, the assessment imposed thereon and the area which should represent the full working capacity of the well with reference to the assessment. One copy of the list has been filed with the Sadar Kánungo, another with the Tahsil Office Kánungo and a third has been retained by the Patwári.

4. When wells are partitioned after settlement, the officer making the partition shall in his final order distribute the revenue of the well over the shares, and the collection of revenue will then be made under rule 2.

5. Every well or share of a well working during the year shall (unless protected by certificate of exemption) be charged the assessment imposed on it at settlement: and, if no assessment was imposed on it at settlement, the assessment shall be charged at the rate of Rs. 8 for the well when fully at work.

6. The demand on wells shall be framed for the whole year after the Rabi harvest and realised with the Rabi instalment.

E.—RULES FOR ASCERTAINING AND ASSESSING THE AREA IRRIGATED FROM CANALS IN HOLDINGS NOT ASSESSED AT SETTLEMENT AS CANAL IRRIGATED

Punjab Government letter No. 149, dated 23rd July 1903.

1. In tracts placed under fixed assessment, if canal water is extended to a holding not assessed at settlement as canal irrigated or not assessed at all in consequence of its being out of cultivation, the land so irrigated from a canal will be assessed to water advantage revenue at the rate of 10 annas per acre of matured crops. The assessment will fluctuate from year to year with the area of crops matured on such lands.

2. Lists have been drawn up and filed with the Settlement record of each village showing holdings in wells and *pattis* not assessed as canal irrigated. Each Patwári will at the end of each crop inspection compare his *girdáwari* entries with this list and see whether or not any portion of such holdings has received canal water. If so, he will prepare a statement for assessing such land in the above mentioned manner. At the same time he will send up a copy of the list showing against each holding the land irrigated with canal water. The assessment proposals will be checked with these lists which will in turn have been checked by the Field Kánungo with the entries in the *khassa girdáwari*.

F.—RULES FOR THE ASSESSMENT OF GARDENS AND FRUIT TREES.

Punjab Government letter No. 82, dated June 1903.

1. When a mango tree assessed individually to land revenue and not as part of a garden is cut or destroyed, the revenue assessed on it may be remitted.

2. When a garden containing mangoes or other fruit trees which have been assessed separately to land revenue is completely destroyed, the revenue imposed thereon at settlement may be completely remitted, and when it is partially destroyed and the profits have been much reduced, a partial remission of the assessment may be granted.

3. Proposals under rules 1 and 2 shall be submitted by the Deputy Commissioner through the Commissioner for the consideration of the Financial Commissioner and the orders of Government. The reduction of assessment will be sanctioned by the Government as a matter of course if the Commissioner and the Financial Commissioner are satisfied that it is necessary.

4. In villages under fixed assessment, no assessment will be imposed on gardens and fruit trees left unassessed at settlement. In villages under fluctuating assessment new gardens unassessed at settlement will pay only the highest rate fixed for the assessment of crops; and when the fruit trees are of slow growth, the Deputy Commissioner may grant the owner a certificate of exemption from assessment for a period not exceeding ten years.

G.—RULES REGARDING EXEMPTION OR FAVOURABLE TREATMENT OF CERTAIN LANDS IN THE ASSESSMENT OF OCCUPIERS' RATES.

Punjab Government letter No. 82, dated 21st September 1903.

Chenáb Series.

1. That all irrigation from the canals to the east of the flood protective embankments which is hitherto charged with half *chhar* should pay full occupiers' rates.

2. That irrigation from Gajju Wah should be assessed at half the occupier's rates.

3. That no occupiers' rates should be charged on crops irrigated from the Kalandar Wah not exceeding 240 acres (this being the maximum area irrigated in recent years).

Explanation.—The *mahri* crops in kharif should be exempted up to 240 acres. All irrigation in excess should be charged at full rates. If the kharif crops are less than 240 acres, the balance of the exemption should be granted from the rabi crops of the year, unless the crops of both harvests put together fall short of 240 acres.

Indus Series.

4. That all irrigation from canals (not creeks) west of the protective embankments should pay full occupiers' rate.

5. That irrigation from escapes east of the protective embankments should pay full occupiers' rate.

6. That irrigation from escapes (west of the protective embankments), breaches and overflow from canal banks should be exempt from payment of occupiers' rates unless an occupier gets water on application.

7. That all irrigation from the Maggi creek above the Suk and Dinga* bifurcation, whether by lift or flow, should remain exempt from assessment of the occupiers' rates.

H—SECURE AND INSECURE AREAS.

Insecure Tract.

Settlement Commissioner's letter No. 3513, dated 9th October 1903.

The only tract in this district which has been classed as insecure is the Thal Assessment Circle of Tahsil Sinánwán, which has been assessed to a fluctuating land revenue demand but has been given a fixed grazing assessment. In order to give the necessary relief in the grazing assessment, the concession embodied in the following rules has been sanctioned by Government.

"In years of drought and cattle disease, when cattle migrate to other parts, or die out, the Collector will, subject to the control of the Commissioner, remit such portion of the demand fixed at settlement as appears necessary in each village.

Panjab Government letter No. 186, dated 5th September 1903."

Secure Tract.

All the remaining portion of the district placed under fixed assessment has been classed as secure.

As regards this tract, rules for remission of revenue in cases of—

- (1) permanent failure of canal water,
- (2) abandonment of a well,
- (3) destruction of a garden or mango trees,

are given separately.

In cases of temporary failure of a canal or of excessive inundation of lands within the secure tract, it may be found necessary to grant temporary relief. For this purpose the average cropped area on which the fixed assessment of each village was based has been noted in the village abstract note books.

Whenever the cropped area of a year falls more than 25 per cent. short of the above mentioned figure, the desirability of suspending a part of the revenue, proportionate to the deficiency should be considered by the Collector.

This slight alteration has been proposed in my letter No. 236, dated 24th April 1904.



सत्यमेव जयते

SHORROT TANSIL
JHANG DISTRICT

MAP OF THE MUZAFFARGARH DISTRICT

SHOWING THE
ASSESSMENT CIRCLES

Scale: 1 inch = 8 Miles



REFERENCE	
British Boundary	
Native Boundary	
Muzaffargarh District Boundary	
Railway Line	
Canal	
Fort	

ASSESSMENT CIRCLES

The District and Sub-Districts	
Police Station	
Chauk	
Post Office	
Police Station	

HAROLD W. KAU
Surveyor and Officer
Muzaffargarh

